

Brandeis University



Waltham, Massachusetts

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Brandeis

UNIVERSITY BULLETIN

Graduate School of Arts & Sciences

1976-77

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Brandeis University

Waltham, Massachusetts



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Brandeis University

**The
Graduate School
of Arts and
Sciences
1976-1977**

Waltham, Massachusetts

VOL. XXVII, No. 2, August, 1976

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"It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach . . .

"It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.

"It must ever be mindful that education is a precious treasure transmitted—a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust."

—from the writings of
LOUIS DEMBITZ BRANDEIS (1856-1941)
on the goals of a university.



"Brandeis will be an institution of quality, where the integrity of learning, of research, of writing, of teaching, will not be compromised. An institution bearing the name of Justice Brandeis must be dedicated to conscientiousness in research and to honesty in the exploration of truth to its innermost parts.

"Brandeis University will be a school of the spirit—a school in which the temper and climate of the mind will take precedence over the acquisition of skills and the development of techniques.

"Brandeis will be a dwelling place of permanent values—those few unchanging values of beauty, of righteousness, of freedom, which man has ever sought to attain.

"Brandeis will offer its opportunities of learning to all. Neither student body nor faculty will ever be chosen on the basis of population proportions, whether ethnic or religious or economic."

DR. ABRAM L. SACHAR, Brandeis' first president, at ceremonies
inaugurating the University, October 8, 1948

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Academic Calendar 1976-1977

Fall Term

Thursday	September 2	Returning students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Friday	September 3	New students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Wednesday	September 8	Opening day of instruction in courses. No section meetings in larger courses until announced.
Tuesday	September 21	Final date for filing Study Cards. No program changes for Fall Term may be made after this date.
Monday	October 4	No University Exercises
Wednesday	October 6	Brandeis Monday
Thursday	November 25	No University Exercises.
Friday	November 26	
Wednesday	December 1	Last day for February degree candidates to submit final drafts of theses and dissertations to department chairmen, and to submit "Application for Degree" to Graduate School Office.
Wednesday	December 15 through Tuesday	Mid-year Examinations. Winter Recess begins after last examination.
Friday	December 17	Final date for admission to candidacy for students expecting to earn the Ph.D. degree in May 1977. Final date for completion of language requirements for students expecting to earn the Ph.D. in May 1977.
Monday	January 3	Fall Term grades due and Incompletes from Spring Term 1976. Final date for faculty certification that February Master's candidates have completed degree requirements, including language(s) and theses, and that Ph.D. candidates have defended dissertations.
Monday	January 10	Final date for deposit of Ph.D. dissertations at the Graduate School Office by February degree candidates.

Spring Term

Wednesday	January 26	Registration procedure for Spring Term begins. Fees are payable at this time.
Thursday	January 27	Opening day of instruction in all courses.
Wednesday	February 9	Final date for filing Study Cards. No program changes for Spring Term may be made after this date. Final date for filing "Application for Financial Aid" for 1977-78.
Monday	March 7	Last date for May degree candidates to submit final drafts of theses and dissertations to department chairmen and to file "Application for Degree" with Graduate School Office.
Friday	April 1	Spring Recess begins after last class. Final date for Master's candidates to complete foreign language requirement(s) for May degree. Final date for completion of language requirements for students expecting to earn the Ph.D. in February 1978.
Monday	April 11	Classes resume. Final date for faculty certification that May Ph.D. candidates have defended dissertations. Final date for May degree candidates to discharge all financial indebtedness to the University.
Monday	May 9	Final date for deposit of Ph.D. dissertations at the Graduate School Office by May degree candidates. Final date for faculty certification that Master's candidates' theses have been accepted.
Monday	May 9 through	Final examinations.
Friday	May 13	
Monday	May 16	Grades due for all degree candidates no later than 10 a.m.
Sunday	May 22	Commencement.



Breaking New Ground

Founded in 1948, amidst the post-World War II explosion of knowledge, Brandeis University literally began at the beginning—at the edge of an educational frontier—but is regarded today as one of the finest small, private research universities in the United States.

Named for the illustrious Supreme Court Justice Louis Dembitz Brandeis, whose far-reaching social vision advanced the welfare of his country, Brandeis is the first Jewish-sponsored, nonsectarian institution of higher learning in America. It is built on the faith in our basic heritage in the humanities, the sciences, the social sciences and the creative arts.

An unswerving commitment to excellence earned early recognition for the young university. Brandeis achieved accreditation in the shortest possible time (1953), and received Phi Beta Kappa recognition just 13 years after it was founded—the youngest institution so honored in over 100 years. The Ford Foundation, assessing the Brandeis record, buttressed its belief in the Brandeis potential during the 1960's with two major challenge grants for academic excellence—an accolade accorded to only five universities in the nation.

The giant multi-universities offer superb facilities and a faculty often too isolated by research from their students. Smaller institutions offer dedicated teachers who, for lack of time or facilities, have stopped doing research. The best of both models meet in only a handful of small schools in the United States. Brandeis is one of them.

Of the 2,000 accredited colleges and universities in the nation, about 100 are also known as "research centers." Brandeis is among this select group. The Florence Heller Graduate School for Advanced Studies in Social Welfare was recently ranked fourth in the country among schools of social work. The Philip W. Lown Center for Near Eastern and Judaic Studies has been named among the best graduate studies programs in Judaica in North America. And the multi-million dollar Rosenstiel Basic Medical Sciences Research Center has attracted some of the top scientists in the world to probe into areas associated with the study of heart disease and cancer.

The College of Arts and Sciences

A Brandeis education encourages personal fulfillment, but only within the framework of social responsibility. Men and women must be able to cope with the complexities of a technological civilization, yet they must be guided by the values of a long historical heritage; self-sufficient to the point of intellectual independence, yet fully prepared to assume the responsibilities society imposes.

Equipped by a liberal arts education, the individual sees reality as a whole with many intricately connected parts. That individual rejects the idea that there is only one truth, one perspective, one redeeming set of values. Study of the liberal arts is a time of inquiry, honest skepticism, and evolution of the intellect. Paradoxically, a liberal education—despite its lack of specialization—becomes sound preparation for a world that constantly makes old learning obsolete.

Brandeis, therefore, attaches prime importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies, as well as those whose educational objective is the baccalaureate degree.

For full information, see the Bulletin of the College of Arts and Sciences.

The Graduate School of Arts and Sciences

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University's Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology, and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, ex officio; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists, and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements cannot, therefore, be regarded as the sole requisite for degrees.

The Graduate School of Arts and Sciences is designed to educate broadly as it trains professionally. It offers courses of study leading to the master's and doctor's degrees.

Areas of Graduate Study

During the academic year 1976-77, graduate programs will be offered in the following areas:

1. Anthropology
2. Biochemistry
3. Biology and Photobiology
4. Biophysics
5. Chemistry
6. Comparative History
7. Contemporary Jewish Studies
8. English and American Literature
9. History of American Civilization
10. Literary Studies
11. Mathematics
12. Mediterranean Studies
13. Music
14. Near Eastern and Judaic Studies
15. Philosophy and History of Ideas
16. Physics
17. Politics
18. Psychology
19. Sociology
20. Theater Arts

Rosenstiel Basic Medical Sciences Research Center

The Lewis S. Rosenstiel Basic Medical Sciences Research Center was made possible in 1968 through the gift of the late Lewis S. Rosenstiel, who was a Brandeis Fellow. The Center has established research programs in the basic medical sciences embracing work in biochemistry, biology, chemistry, microbiology, physics, and psychology. Staff members are jointly appointed to the Brandeis faculty basic science departments. The Center invites participation of distinguished scholars and medical scientists, offers hospitality to younger researchers at the undergraduate and fellowship level, sponsors symposia and colloquia, and underwrites scholarly publications.

The Basic Medical Sciences Research Center contains sophisticated scientific equipment and facilities. Through cooperative programming, both with departments at Brandeis and in the Boston area, the Center has broadened the scope of basic medical science research offerings at Brandeis. Grants from such agencies as the National Science Foundation, National Institutes of Health, and American Cancer Society, among others, support research programs in the Rosenstiel Center.

The Rosenstiel Center sponsors the annual presentation of the Lewis S. Rosenstiel Award, given to recognize distinguished work in basic medical research. Created in 1971 to also honor Mr. Rosenstiel, the award consists of a handsome bronze medallion and a stipend of \$5,000.

The Florence Heller Graduate School for Advanced Studies in Social Welfare

The Florence Heller Graduate School for Advanced Studies in Social Welfare is a professional school established by Brandeis University to provide an educational program directed toward leadership responsibility in the field of social welfare. The School was made possible by an initial endowment from the late Mrs. Florence G. Heller of Chicago. It was organized in 1959 following careful study by the President, the Administration, and the Board of Trustees of Brandeis University after consultation with a distinguished panel of social work educators and social welfare authorities.

The School is housed in the Florence Heller Building complex which includes the Benjamin Brown Research Building. These buildings contain classrooms, faculty offices, student rooms, and research facilities.

The School offers an educational program of study leading to the Ph.D. degree. Courses cover social policy analysis, applications of economic analysis to social policy issues, applied social research, and social planning. Specialized courses are offered in a number of fields including income maintenance and manpower development, health planning, gerontology, mental health and mental retardation, and alcoholism. Students are admitted either with or without a previous master's level graduate degree. Minimum full-time residence requirements are one year for students entering with a prior graduate degree and two years for others. The normal expectation, however, is for at least one additional year of full-time residence beyond these minimum requirements.

In addition to its training program, the School conducts an active program of policy-oriented research related to its broad range of social welfare interests. Research projects are interdisciplinary in character and usually involve collaborative activity between faculty and advanced students.

Full information is available in the Bulletin of the Heller Graduate School.

Graduate School Office

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

Dining Facilities

Graduate students may sign meal contracts for varying numbers of meals or buy cash meal books. Arrangements for these contracts are made at the Food Director's Office in Kutz Dining Hall. A kosher kitchen is also maintained. Individual meals and light snacks may be purchased at Usdan Student Center.

Housing

Brandeis University owns approximately 100 apartment units available for single and married graduate students. All apartments are within easy walking distance of the campus. These include efficiency, one, two and three bedroom *unfurnished* apartments as well as efficiency and one bedroom *furnished* apartments. Single students may rent a space in a one, two, or three bedroom apartment and request that the Graduate Housing Office assign a roommate. The one bedroom apartments are particularly designed to allow use as two separate bedrooms with a common kitchen and bathroom. Early application for housing is encouraged.

Housing information, rental rates, and copies of the housing contract may be obtained by writing to the Graduate Housing Office, 150 Charles River Road, Coffman Building, Waltham, Massachusetts 02154.

Office of International Programs

This office serves as the counseling center for students who come here from Asia, Africa, Europe, and South America. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U.S. Immigration Service in obtaining working permits and documents necessary for extended periods of study, and in other technical matters which may arise. (See page 15.)

In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Fellowship Program (see page 33), and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on university-accredited programs should consult this office.

Health Services

The University Health Services provides a program of comprehensive health care for students not only as it relates to physical illness, but also to personal and emotional concerns. Students are entitled to services available at the Stoneman Infirmary, the Golding Medical Outpatient Services Center, and Mailman House. In addition, each student is encouraged to participate in the Brandeis University Student Health Insurance Plan. Although participation in the Plan is not mandatory, it is required that a suitable alternative insurance plan be substituted. Except for limited day-care facilities, the Health Services and the use of the Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the College and Graduate Schools are responsible for the submission of a Health Examination Report completed by their family or personal physician. In addition to information about previous health and details of the physical examination, evidence of immunization against smallpox and tetanus are required. Protection against poliomyelitis is desirable. Since students may not register until these requirements have been satisfied, it is strongly recommended that the Health Examination Report be submitted by July 1.

The Student Health Insurance Plan is designed to defray expenses of those care situations which are beyond the scope of the Health Services; for example, laboratory and x-ray examinations, as well as hospitalization for illnesses or accidents of more serious nature. The Plan extends for a full calendar year commencing September 1. A brochure outlining the details of the Plan, as well as the services offered by the University Health Services, is distributed to each student at registration, and copies are mailed to parents. Students and parents are urgently requested to read this brochure and keep it for reference. Whereas situations not covered within the Health Services or by the Insurance Plan are infrequent, an awareness of these possibilities will tend to lessen misunderstanding and disappointment. In such instances, students and their parents will be responsible for expenses which are not covered by the University's health program or its associated insurance policy. Similarly, students and their parents will be responsible for expenses which are not covered by alternative insurance programs substituted for the Brandeis University Student Health Insurance Plan.

Psychological Counseling Center

The Psychological Counseling Center, which is a part of the University Health Services, is located in Mailman House. It provides professional assistance to students who have personal or emotional problems. Those who wish such help may refer themselves directly to the Center. Their communications with the staff are held in strict confidence.



Admission

As a rule only well-qualified men and women who have completed the normal four-year program leading to the Bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a Bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate programs in biochemistry, biophysics, politics, and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. Applicants to the contemporary Jewish studies program must submit the results of either the Graduate Record Examination or the Miller Analogies Test. All other applicants are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, 200 Nassau Street, Princeton, N.J. 08540, or Box 1025, Berkeley, Calif. 94704.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, N.J. 08540, U.S.A. The test is administered at various established centers abroad.

Application

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" should be completed and returned in duplicate as soon as possible. Applicants requesting financial aid must file a GAPSFAS form. Closing dates for receipt of applications by the several graduate departments are included with the application materials.

Applications for admission for the Spring Term must be filed by December 1. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

All applicants must arrange to forward, in duplicate, official transcripts of all undergraduate and graduate work. In addition, they must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom they have studied in their proposed area of study. Applicants who have engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom they have done graduate work.

Many departments also require the submission of samples of work as well as the materials described above. Applicants should consult departmental requirements in a later section of this catalog for enumeration of additional materials to be submitted.

All applications must be accompanied by an application fee of \$25, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applicants are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by: the distinction of his or her previous record, particularly in the proposed area of study; the confidential letters of recommendation submitted in support of the application; and his or her adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the appropriate department or committee. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results in April.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he or she must accept the offer of admission and awards, if any. If a student selected for admission indicates that he or she does not intend to accept the offer or fails to reply by the date specified, the admission offer becomes void and another applicant may be accepted.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of financial aid (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in process at the time of acceptance. In addition, students who are accepted *are required to complete and return a medical questionnaire and a health insurance form*, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he or she should notify the Dean of the Graduate School as soon as possible. If such students are to be admitted for a subsequent academic year, they must request reactivation of their applications at the appropriate time, and bring them up to date.

Applicants who have been denied admission may reapply in a later year, particularly if they have had further training which would strengthen their applications or if they can submit additional letters of recommendation.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the department or committee administering the program of study.

Notice of Nondiscriminatory Policy as to Students

Brandeis University admits students without regard to sex, race, color, national and ethnic origin to all the rights, privileges, programs and activities generally accorded or made available to students at the school. It does not discriminate on the basis of sex, race, color, national and ethnic origin in the administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other school-administered programs.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he or she may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a Master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in March. The readmission application must be filed with the Graduate School Office.

Foreign Students

Graduates of foreign colleges and universities who have the equivalent of an American Bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance.

In order to ascertain the eligibility of the candidate, Brandeis University requires that each applicant file a *Preliminary Request for Application* form obtained by writing to either the Graduate School of Arts and Sciences or the Office of International Programs any time before September 1 of the year preceding the anticipated admission date. This information will be evaluated and the application form itself will be sent to those who qualify.

Final applications must be completed and returned by February of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

Entrance Examinations. All applicants whose major language is not English must take the Test of English as a Foreign Language (TOEFL); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may require this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, N.J. 08540.

Financial Aid. Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expense. Hence the student, when applying for admission, should indicate a means of financial support. At least \$3,000 in United States currency is necessary to cover living costs for the nine month academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

Employment. The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. During the summer vacation, the Immigration Service may permit the student to obtain off-campus employment. Such permission cannot be guaranteed, however. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.



Requirements for the Degree

The following general requirements apply to the awarding of graduate degrees in all areas of study. For specific program requirements students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a Master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study. Departments may, at their option, require more than eight half-courses of graduate study. All departments offering Master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the Master's degree, two copies must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a May degree.

The Master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction twelve half-courses at the graduate level, and must meet the specific requirements for the degree as set forth under the Music Department, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a May degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete the equivalent of sixteen half-courses at the graduate level and must meet the specific requirements for the degree outlined under Theater Arts, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Students enrolled for specialization in dramatic writing must submit two copies of a play in final form in lieu of a thesis.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each department or committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates must demonstrate proficiency in at least one foreign language. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred.

Students entering Brandeis University with no previous graduate work must earn the Doctor's degree within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

Language Requirements

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A., the M.F.A. and the Ph.D. degrees. Several programs have additional language requirements. Each department or program determines which languages are acceptable as satisfying the foreign language requirements. For specific requirements of each program, consult the appropriate section of this catalog.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements.

A student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of the field at a level satisfactory to the department or committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific department or committee requirements for admission to candidacy may, at the recommendation of the department or committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the degree, the student must be admitted to candidacy at least one semester before it is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a February degree and no later than March 1 for a May degree of the academic year in which the degree is to be

conferred. Upon the written recommendation by a candidate's department or committee that the application be approved, the record will be reviewed by the Graduate Council which recommends the student to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words, should be submitted to the department or committee chairman. The style and format of all dissertations are determined by the respective departments. The chairman will then appoint two or more readers, besides the principal supervisor, to read the candidate's dissertation. Certification of the approval of the dissertation by these readers will be communicated to the Dean of the Graduate School and the chairman of the department or committee. The chairman will then schedule a final oral examination and notify both the Dean of the Graduate School and the candidate of the time and place of the examination at least three weeks prior to the scheduled date of the dissertation defense.

The dissertation, when approved by the readers, must then be deposited in the department where it will be available to all interested members of the faculty for at least two weeks prior to the final oral examination.

The Dean of the Graduate School will publish in the *Brandeis University Calendar* the time and place of a candidate's final oral examination and the title of the doctoral dissertation. The final oral examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members of other institutions.

The examining committee, recommended by the department chairman and approved by the Dean of the Graduate School must be composed of a minimum of three faculty examiners. At least one member of the committee shall be from a graduate area outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his or her department or committee of responsibility for coverage at the examination.

A report, signed by the examining committee, certifying the candidate's successful performance on the final oral examination, will be submitted to the Dean of the Graduate School.

Deposit and Publication of Dissertation

No later than the dates specified in the current academic calendar for February and May degrees, the candidate must deposit two copies of the finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers.

One copy will be retained by the library, the other will be returned to the student, both bound. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.



Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10 if registration is not completed at the time specified in the academic calendar.

Registration consists of payment of all fees for the semester and filing a Registration Card and other duly completed required forms. Program Cards are filed at a later date.

Program of Study

Before filing a Program Card, the student should plan a program of study in consultation with the chairman of the department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

Graduate students may not normally register for an undergraduate course (numbered below 100) in their own area for degree or residence credit unless they secure the signed approval of both the instructor of that course and their department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the Program Card at Spring registration, and ordinarily they may not be dropped at midyear. Students wishing to drop a full-year course at midyear must petition the Dean of the Graduate School for permission, after receiving the written approval of the instructor of the course and of the chairman of their department. Students may not register at midyear for a full-year course without the written approval of the instructor of the course and their department chairman.

Program Cards are filed approximately two weeks after the opening days of instruction (see Academic Calendar for specific date) and are considered to be final.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course may be audited without the permission of the instructor. Auditors may not take examinations or expect evaluation from the instructor. No credit is given for an audited course.

Change of Program

Only under unusual circumstances are students allowed to drop courses after filing their Study Cards. To do so, a Course Change Card is obtained from and returned to the Graduate School Registrar. Courses must be dropped no later than one week prior to the beginning of an examination period. Each course dropped is subject to a \$10 fee.

Registration in Terms of Time

Advanced students—those who have completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere—may register in terms of time, subject to the signed approval of their department chairman. Their Program Cards must indicate that they are registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for advanced graduate students. Registration in terms of time frees students to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although students registering in terms of time will usually register for an advanced research or dissertation course. Their time will be spent in such research and reading as will be most beneficial to their development as scholars.

Absence from Examinations

Students who are absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No students may be excused from such examination unless for emergency or medical reasons, nor may they be excused if they were able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department who will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. Courses graded "Non-credit" are those which carry no credit but which are required of the student. In thesis or research courses, if a letter grade cannot be given at the end of each semester or academic year, "Credit" or "No Credit" may be used.

"No Credit" and any letter grade below B-minus are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue a report of grades and of degree requirements satisfactorily completed.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following

the term in which it was received. When failure to take a final examination has resulted in an "Inc.," resolution of that grade to a letter grade must occur within six weeks of the beginning of the next semester. If a student requires additional time to settle an incomplete grade, he or she may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate work taken elsewhere may not be counted toward fulfillment of the residence requirement at Brandeis University for the degree of Master of Arts, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. Not more than one semester of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Master of Fine Arts. Not more than one year of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Doctor of Philosophy.

A student admitted to a Ph.D. program at Brandeis University who has done graduate work elsewhere may file an application to have the work at that institution counted toward fulfillment of residence requirements. However, language requirements, qualifying and comprehensive examinations, the dissertation and the final oral examination, and other such requirements must be fulfilled while enrolled at Brandeis.

To be eligible to receive credit toward fulfillment of residence requirements for work taken elsewhere, students must complete at least one semester's residence at Brandeis as full-time students. They may then file an "Application for Credit for Graduate Work Done Elsewhere" and submit it to the Graduate School Office, which will advise the student of the action taken on the application. An applicant will not necessarily be given the credit requested. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of the area of study. In any case, every candidate for the Ph.D. degree must complete at least one year in residence at Brandeis as a full-time student, or the equivalent thereof in part-time study.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study.

Master of Fine Arts

The minimum residence requirement for all students in Music is three semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

The minimum residence requirement for all students in Theater Arts is four semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full tuition rate for each year, or the equivalent thereof in part-time study.

Full-Time Resident Students

A full-time student is one who devotes the entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of the department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by the department chairman, but no student may receive credit for, or be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see p. 26).

Part-Time Resident Students

A part-time student is one who devotes less than the entire time to a program of graduate work at Brandeis University. Students may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of the department chairman, who may restrict the time permitted for such employment.

Students wishing to pursue part-time resident study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time study is not possible. Students receiving financial aid from the University, who wish to change their status from full-time to part-time residency, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

Properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. Special students who later wish to change their status to that of part-time or full-time students working for a degree must apply for admission as resident students. They must also file a special petition if they wish credit to be accepted for any courses taken at Brandeis as special students. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leaves of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leaves of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he or she must request such extension in writing before the leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

Graduate students who have completed residence requirements and who are not registered during the period in which they are completing degree requirements are considered Continuation Students. A student in this category is not eligible for a leave of absence. (See Fees, p. 27.)

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to the department chairman and to the Dean of the Graduate School. Failure to comply may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the Controller's Office.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, through disciplinary procedures established in the Graduate School. Neither the University nor any of its Trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

Fees and Expenses

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration will be refused the privilege of registration. A registered student who defaults in the payment of a subsequent indebtedness to the University shall be subject to suspension, dismissal, and refusal of a transfer of credits or issuance of a transcript. If the student is a degree candidate, his or her name will be stricken from the rolls. A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

Application Fee: \$25. Payable by all applicants for admission at the time the application for admission is submitted. It is not refundable. Checks and money orders should be made payable to Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1976-77 are as follows:

Full-time resident students: \$3,875 per year, or \$1,940 per semester.

Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$1,455.00	\$2,910.00	Three-quarters
\$ 970.00	\$1,940.00	One-half
\$ 485.00	\$ 970.00	One-quarter

Special Students: \$485.00 per course per semester.

In view of the constantly increasing costs of education, students may expect one or more tuition increases during their academic careers.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to

\$350. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided the department chairman approves of the program of study as being a full-time program and signs the program card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete residence requirements, but wishes to register for additional courses or take a fuller program of study, he or she shall be charged for the part-time program needed to complete residence, plus the post-residence fee.

Summer Tuition Fee: Brandeis University does not conduct a regular summer school session. However, special courses of study on an individual basis may be arranged for regular students. The tuition for graduate students who remain in residence for special summer programs of a twelve week duration is \$500, and of an eight week duration, \$350.

Late Registration Fee: \$10. Payable for failure to complete registration at the time announced by the Graduate School Office.

Change-of-Program Fee: \$10. Payable by any graduate student who wishes to drop a course after filing Study Cards.

Continuation Fee: \$20. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leaves of absence.

Master's Fee: \$50. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who earns a degree in any semester following one in which he or she has not been in residence, shall pay the Master's Fee. The fee is chargeable only once.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the dissertation, publication of the abstract of the dissertation in *Dissertation Abstracts*, copyright protection for the author if desired, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation, one for use in the University Library, and one Xerox-printed copy in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for graduation and cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

Reinstatement Fee: \$10. Payable by a student who, after suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

Transcript Fee: \$2. Students, former students, and graduates who request official transcripts of their records in the Graduate School are charged \$2 for each copy issued after the first one, which is free. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

Diploma Fee: \$10. Payable by candidates for the M.A. and M.F.A. degrees.

Student Insurance Fee: \$141. Payment of the Insurance Fee entitles the graduate student to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable. Student Insurance is optional for Special Students.

Student Health Fee: \$50. Entitles the graduate student to use of the Health Services. This fee is mandatory for regular graduate students.

Dependent Coverage: Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$633. Special Students are not eligible for this plan.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws, he or she may petition the Dean of the Graduate School for a partial refund of tuition in accordance with the following:

1. Tuition:

Withdrawal: Before the opening day of instruction: 100% of semester tuition.
On or before the second Friday following the opening day of instruction: 75% of semester tuition.
On or before the fifth Friday following the opening day of instruction: 50% of semester tuition.
After the fifth Friday following the opening day of instruction: no refund.

2. Scholarships: In the case of a scholarship student who withdraws, the student's account will be credited with the same proportion of the semester scholarship as charged for tuition: 25% if the student leaves on or before the second Friday; 50% on or before the fifth Friday; and, 100% thereafter. The balance of the scholarship will be cancelled.

All refunds are subject to review and final approval of the Controller.

Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid without filing with the Graduate School Office a standard financial aid form (GAPSFAS). All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply for a renewal by filing the "Application for Financial Assistance."

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for undesirable conduct or academic standing.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. No student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post residence fee. Priority in making awards is given to full-time students and teaching assistants.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full scholarships and partial scholarships are available. Scholarship students are liable for all but tuition charges.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless the award includes a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of the program spent as a student in fulfillment of degree and residence requirements.

First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made on the authority of the President of the University by the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. A graduate student who is interested in being appointed as a teaching assistant should write or see his or her chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate an,

appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its Trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

Research Assistantships

Research assistantships are available in the science areas. First-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the department or committee administering the graduate program.

Loans

Federally Insured Student Loan Program (FISLP). A student is eligible for a federally insured student loan if he meets the following requirements: (1) is accepted for enrollment or is attending Brandeis University and is in good standing as determined by the University; (2) is carrying at least one-half the normal full-time workload; (3) is a citizen and/or national of the United States or is in the United States for other than a temporary purpose; (4) can demonstrate need. An eligible student may be able to borrow up to \$2,500 in any academic year at a 7% interest rate, and does not have to begin a five to ten year repayment until nine months after he ceases to be a full-time or half-time student. Special Students are normally ineligible for such loans.

Information and applications for this program are available from banks, savings and loan associations and credit unions. In extenuating circumstances where an applicant is unable to secure an outside federally insured loan, an application for the loan may be submitted to Brandeis.

Students who plan to borrow through a source which participates in the Federally Insured Student Loan Program must have on file at the Graduate School Office a current Graduate and Professional Student Financial Aid Service form (GAPSFAS). Forms may be obtained at the Graduate School Office or from the Educational Testing Service, Princeton, N.J. No FISLP loan can be processed until this form is received.

Resident Counselorships

A limited number of positions are available for both married and unmarried men and women as counselors in the University residence halls. Applications may be obtained from the University Residence Halls Office and should be returned no later than April 15. Appointments are made by the Residence Hall Officer on recommendation of the Dean of the Graduate School on or before June 25.

Office of Student Employment

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.

Endowed Schools

Danielsen School of Philosophy, Ethics, and Religious Thought

The Albert V. Danielsen School of Philosophy, Ethics, and Religious Thought was made possible through a gift from Mr. Danielsen, a Fellow of the University, from Wellesley Hills, Mass.

The School includes the Department of Philosophy, which now combines undergraduate and graduate programs through the M.A. and Ph.D. degrees. The graduate program in philosophy is designed to prepare students for careers in the field as scholars and teachers, and it places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. Added to the two fully endowed chairs of philosophy in the School is the Albert V. Danielsen Chair in Christian Thought.

The Danielsen School thus hopes to encourage the advancement of philosophical thought in the context of contemporary issues, following the broadest scholarly and interdisciplinary approaches in an age of ecumenism and imperative social need.

Fierman School of Chemistry

The Harold and Minnie Fierman School of Chemistry, created through a benefaction from Brandeis Trustee Harold L. Fierman, incorporates graduate and undergraduate programs, including research activities, lecture programs and colloquia.

At the undergraduate level the curriculum is highly diversified, including basic courses in analytical, organic, physical, and inorganic chemistry. The program emphasizes the mastery of fundamental chemical principles with early exposure to research programs in preparation for graduate studies in chemistry, medicine or allied fields.

At the graduate level, M.A. and Ph.D. candidates pursue advanced studies and research projects in synthetic organic and organometallic chemistry, physical organic chemistry, structured inorganic chemistry, quantum chemistry, photochemistry, enzyme reactions, chemical physics, and laser chemistry. Of the over 100 students awarded the Ph.D., many have held a variety of governmental, industrial or foundation fellowships. Post Doctoral Fellows come to the department from leading universities around the world.

The School has been aided, in part, by grants from the National Institutes of Health, National Science Foundation, Energy and Research Development Administration, Research Corporation, and the Petroleum Research Foundation. Research conducted under these agencies has been published in over 700 papers in leading professional journals.

Fisher School of Physics

The Martin Fisher School of Physics, established through a gift from the late Martin A. Fisher of New York City, a Fellow of the University, encompasses both theoretical and experimental physics. The Fisher School incorporates the graduate and undergraduate programs in physics and also provides the setting for lectures and colloquia in physics. Scholarship and fellowship assistance provided by Mr. Fisher enhances the teaching and research at the undergraduate, graduate, and postdoctoral levels.

The School's undergraduate program ranges from introductory courses in classical and modern physics, computer sciences, and astronomy to advanced courses in atomic and

nuclear physics; classical, continuum and statistical mechanics; quantum mechanics; nuclear, solid state, and mathematical physics. M.A. and Ph.D. programs include courses in astrophysics, high energy physics, plasma physics, quantum theory of fields, solid state physics, and general relativity. Experimental and theoretical research is carried out in high energy physics, solid state physics, properties of condensed matter, quantum theory of solids, and quantum field theory.

Grants from such agencies as the National Science Foundation and the Atomic Energy Commission, among others, support research programs in the Fisher School. The Fisher School also provides research opportunities for a large number of postdoctoral fellows.

Kutz School of Biology

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Del., a Fellow of the University. The School encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas, with special heed to new discoveries and the results of current experimentation.

Students are offered a balance between traditional background in biology and the thorough discussion of new knowledge. They are encouraged to engage in original research and independent study. The biology program also provides research and teaching opportunities for a large number of post-doctoral fellows.

A major portion of the governmental, industrial, and private research grants awarded to the University are devoted to varied projects in biology and health sciences. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

Crown School of Graduate Studies in American Civilization

The Irving and Rose Crown School of Graduate Studies in American Civilization was established by the generosity of Brandeis Fellows Irving and Rose Crown. Its primary objective is to attract and support gifted students in their work toward the Ph.D. in the History of American Civilization.

In order to meet the public service objective of the school, a Crown Fellowship award is occasionally made to special students both here and abroad—drawn from the Foreign Service, the media, and other important facets of public life—who would benefit from participation in graduate studies in the School.

Strengthened by the achievements of Crown Fellows of recent years, the Crown School contributes to the deeper understanding of the American past and present, thereby helping to shape the nation's future.

Lown School for Near Eastern and Judaic Studies

Created through the generosity of Brandeis Trustee Emeritus Philip W. Lown of Miami Beach, Fla., the Lown School for Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture, and issues, offered by both the undergraduate and graduate departments of Near Eastern and Judaic Studies. The University has assembled an array of distinguished scholars who offer an extremely broad complex of programs designed to prepare students for scholarly careers or for communal service.

The School includes the Center for Contemporary Jewish Studies, organized for the purpose of further research and seminars dealing with contemporary issues and for pro-

viding graduate education for students interested in professional careers in Jewish communal service and education.

The Lown School for Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters building on the Brandeis University campus was completed during 1968.

Poses School of Fine Arts

The Poses School of Fine Arts, established through a gift from Brandeis Trustee and Mrs. Jack I. Poses of New York City, embodies the broad undergraduate curriculum in the fine arts. It also incorporates the Poses Institute of Fine Arts, which supplements course work and workshops in painting and sculpture.

The undergraduate program in fine arts provides a substantial area of studies in the form and meaning of art from the present day to antiquity. The program stresses individual creativity and the varied techniques of the artist.

The Poses Institute of Fine Arts is host to exhibitions of paintings, sculpture, artifacts, and other forms of contemporary and traditional art in the University's museum and gallery.

Mr. and Mrs. Poses also underwrite the Jack and Lillian Poses Creative Arts Awards of Brandeis University, presented annually in the areas of theater arts and film, music and dance, literature, and fine arts.

Swig School of Political Science

A generous benefaction from Brandeis Trustee Emeritus Benjamin H. Swig of San Francisco has established the Swig School of Political Science. The Swig School encompasses the University's Politics Department, including several endowed academic chairs established earlier through the efforts of Mr. Swig. Among these are: the Harry S. Truman Chair in American Civilization; the Earl Warren Chair in American Constitutional Studies; the Christian A. Herter Chair in International Relations; and the Adlai E. Stevenson Chair in International Politics.

Special Scholarships and Fellowships

The Abram L. Sachar International Fellowship Program

The Abram L. Sachar International Fellowship Program was instituted in 1969 by the Trustees of Brandeis University in tribute to the twenty-year incumbency of the University's first president. It is a highly selective program that supports Brandeis graduate and undergraduate students abroad during a period of study or research complementary to their education here.

The program operates on a variety of levels. For example, a graduate student, after passing the qualifying examinations, may pursue advanced research abroad. A graduating senior may spend a year of study abroad as a culmination of the Brandeis experience. A well-qualified undergraduate who plans a period of study at a foreign university or program which has offerings not available at Brandeis is also eligible for a Sachar grant.

Eligibility requirements for applicants include a high level of scholastic achievement, financial need as indicated by University records and outstanding intellectual competence or creative ability. Application forms are available at the Office of International Programs, Sachar International Center.

Irving and Rose Crown Fellowships

Underwritten by the Crown family of Chicago, the Irving and Rose Crown Fellowships subsidize graduate students in the field of the History of American Civilization with substantial grants to complete their doctoral studies. Subject to annual review, awards are normally renewable over a period of four years. The Fellowships are designed to attract gifted scholars who plan careers in teaching, research and writing, or in public service and allied areas. Candidates are selected by the executive committee of the graduate program and reviewed by distinguished authorities from other universities. Fellowship awards are made to advanced students with outstanding records in graduate and professional programs, as well as to BA's with honors degrees in history and related fields. Crown supplemental grants in aid of research are also available to Crown Fellows.

Gillette Graduate Teaching Fellowships

Created by the Gillette Company of Boston to provide tuition and living stipends for five doctoral candidates in the sciences.

Goldwyn Life Sciences Fellowships

Established by the Samuel Goldwyn Foundation of Los Angeles, the Samuel Goldwyn Life Sciences Fellowships provide support for graduate students studying the life sciences. Preference is given to foreign-born applicants who need financial aid and who seek to study in the United States. Five full renewable fellowships—covering tuition, health fee, research support, and a stipend—are provided annually.

Gordon Fellowships

A subsidy from the James Gordon Grant for Government of Chicago has permitted the Department of Politics to develop a special doctoral dissertation program providing fellowships to selected qualified candidates for the Ph.D. degree in politics. To be eligible, students must have completed their first year of graduate work, either at Brandeis or elsewhere. The fellowship awards are limited to individuals whose dissertations deal with approved topics within the fields of American urban and/or local political problems. Fellowships may be held for one or two years. The subsidy also provides research funds, summer stipends, and travel money for field work or investigation in connection with preparation of the dissertation.

Mary and Abbey Hirschfield Fellowships in the Humanities

Created through a major bequest to Brandeis University from the estate of the late Mary Hirschfield of Chestnut Hill, Mass., the Mary and Abbey Hirschfield Fellowships offer annual assistance to graduate students in the humanities. Selection of students to receive the fellowships is made by a special committee of Brandeis University faculty, which determines choices on academic achievement and financial need. Students eligible for the generous fellowships are taken from the areas of classics, English and American literature, Romance and comparative literature, Germanic and Slavic languages, philosophy and history of ideas, Mediterranean studies, and Near Eastern and Judaic studies.

Joe and Emily Lowe Foundation Fellowships in the Creative Arts

Granted by the Joe and Emily Lowe Foundation, Inc., New York City, to subsidize gifted young people concentrating in the creative arts.

The Harry and Mildred Remis Scholarship and Fellowship Fund in the Creative Arts

Established by Brandeis Trustee and Mrs. Harry Remis of Boston, Mass., this endowment offers assistance to students who have demonstrated promise and potential in fine arts and music.

Remis Awards are given to undergraduates at the end of their junior year to facilitate summer study at centers of art and music either in this country or abroad.

The Harry and Mildred Remis Graduate Fellowships in Music are offered to qualified graduate students seeking to pursue careers in musical theory and composition and in the history and literature of music. The Fellowships are normally given to candidates who have completed one year of graduate work, on the basis of demonstrated excellence in academic areas and general musicianship, on creative potential and promise, and on financial need.

Rogoff Foundation Trust

The Rogoff Foundation Trust, a major gift established by the trustees of the Rogoff Foundation Inc., provides support for scholarships, fellowships, study or research in the pre-medical or medical sciences, or related life sciences.

Bernard and Miriam Kessner Fellowships Trust Fund in Biology and Chemistry

The Kessner Fellowships have been underwritten by the gift of the late Dr. and Mrs. Bernard H. Kessner of Bay Harbor, Fla., Fellows of the University, to provide annual support to graduate students in the fields of biology and chemistry. These generous fellowships go to ten graduate students, selected each year from applications made throughout the United States. A Brandeis University faculty committee processes the applications, but final choices are made by a special jury of three outstanding academic figures in the fields of biology and chemistry. The Kessner Fellowships are designed to help students who are planning careers in research and university teaching to complete their doctoral training without the interruptions that so often accompany post-graduate work.

Samuel Schulman Graduate Teaching Fellowships

Underwritten by a gift from Samuel Schulman of Los Angeles, the Samuel Schulman Graduate Teaching Fellowships were established in 1974 to aid outstanding graduate students in any academic field. The program is designed to give valuable supervised classroom teaching experience to students while they pursue their studies. Six Schulman Fellowships are awarded each year.

Zale-Lipshy Endowed Scholarship and Fellowship Fund

This major scholarship and fellowship fund was established in 1974 by the Zale Corporation of Dallas and its friends and associates throughout the country, in honor of three principals of the firm: Morris B. Zale, a Trustee Emeritus of Brandeis, William Zale, and Ben A. Lipshy, all of Dallas. The gift was given in part to recognize the 25th Anniversary of Brandeis and is designed to assist undergraduate and graduate students in all disciplines. Funds are awarded without discrimination and solely on the basis of merit and need.



Areas of Study and Courses—1976-1977

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "aA" indicates a full course given in the Fall Term; "b" indicates a half course given in the Spring Term; "bB" indicates a full course given in the Spring Term; "aR" indicates a course given in the Spring Term; "bR," a course given in the Fall Term which is identical with an "a" or "b" course of the same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

The University reserves the right to make any changes in the offerings without prior notice.

***Course not offered for 1976-77**

AMERICAN CIVILIZATION

See History of American Civilization (page 84).

ANTHROPOLOGY

Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and field work, which are integral parts of the doctoral program.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his or her residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Associate Professor Benson Saler, *Chairman:* Culture and personality. Primitive philosophies and religion. Formal analysis. Middle America and South America.

Professor Helen Codere: Method and theory. Economic anthropology. Primitive art. Africa.

Professor George L. Cowgill: Archaeology. Mathematical and computer methods in anthropology. Mesoamerican civilizations. Origins of early states. Population.

Professor David Kaplan: Economics. Method and theory. Mexico.

Professor Robert A. Manners: American Indians. Modern cultures. Method and theory. Africa.

Associate Professor Robert C. Hunt: Social anthropology. Modernization. Mesoamerica.

Associate Professor David E. Jacobson: Social anthropology. Urban social organization. Africa.

Associate Professor Marguerite S. Robinson: Social organization. South Asia.

Assistant Professor Dave D. Davis: Archaeology. Human ecology. Africa. The Caribbean.

Assistant Professor Marvin Davis: Social and cultural anthropology. Politics. Law. Social stratification. South Asia.

Assistant Professor David A. Horr: Physical anthropology. Primate studies.

Assistant Professor Judith T. Irvine: Ethnography of communication. Linguistics. Africa.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded upon successful completion of the following requirements: a minimum of eight half-courses, a high passing grade in a written qualifying examination in cultural anthropology, demonstration of proficiency in one foreign language, and a research paper based on a subject chosen by the student in consultation with his or her adviser.

Doctor of Philosophy

Admission to the Program. Students who complete the first year qualifying examination at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may be admitted as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the Department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to pass the first-year qualifying examination, but, at the discretion of the Department, this may be waived.

Program of Study. During their first year of residence, students are assigned to an adviser with whom they design their course and research program. Maximum flexibility is encouraged regarding the choice and timing of course work. Doctoral candidates must complete two years of residence at Brandeis, and a minimum of sixteen half-courses. Work done at other institutions may be counted as part of residence, as stipulated above and in the general rules of the Graduate School. At least twelve half-courses must be in anthropology.

Students concentrating in cultural anthropology select areal and topical courses in their field of special interest. It is expected that students will attain a scholarly competence in at least one culture area and a topic of study. In addition, students are required to pass course examinations in statistics, physical anthropology, archaeology, and linguistics. The pre-doctoral examination in cultural anthropology, normally given following two or three years of residence, includes questions based on the student's particular area and topical interests.

Students concentrating in archaeology must meet most of the same requirements as those concentrating in cultural anthropology. They will be expected to pass the first-year qualifying examination in cultural anthropology. The pre-doctoral examination will emphasize archaeology, but will also include other fields of anthropology.

Language Requirement. For Ph.D. candidates, the foreign language requirements include the satisfactory completion of the M.A. language examination and a research paper based upon sources in a foreign language.

Summer Training Program. A selected group of students in the Ph.D. program will be invited each year to participate in a summer field-training program under the direction of

a faculty member. No students will be admitted to this program unless they have passed the qualifying examination in cultural anthropology.

Admission to Candidacy. A student is admitted to candidacy on satisfactory completion of the following: the general qualifying examination (where required); an examination in at least one foreign language; forty-eight hours of course credits; and a pre-doctoral examination which may cover any aspect of anthropology and tests the scope of the student's knowledge and his or her ability to integrate that knowledge.

Field Work for the Dissertation. As soon as possible after qualifying for candidacy for the Ph.D., the candidate will be expected to begin a full year of field research, which will ordinarily form the basis of the dissertation.

Dissertation and Defense. The degree of Ph.D. will be awarded only after successful defense of the dissertation.

Courses of Instruction

ANTHROPOLOGY 100a. Interdisciplinary Pro-Seminar in Latin American Studies

See Latin American Studies 100a

Mr. Hindley

ANTHROPOLOGY 102a. Anthropological Linguistics I

An introduction to linguistics from an anthropological perspective. The course will stress: 1) how to deal with unfamiliar languages, and 2) the development of linguistic theory (syntax and phonology) in the 20th century. Readings in linguistic theory, especially on current trends, will be combined with practical work on languages from various parts of the world.

Ms. Irvine

ANTHROPOLOGY 102b. Anthropological Linguistics II

The study of language use and variation. Topics include: semantics; language change; language acquisition; and sociolinguistics (language variants and social groupings; language in social interaction). Problems of relating linguistic theory to variation and social context will also be considered.

Prerequisite: Anthropology 102a or English 191a.

Ms. Irvine

ANTHROPOLOGY 103b. Language, Society and Culture

Language, thought and meaning; speech differences within societies; processes of change; expressive language and poetics. Considerable attention will be given to the nature and role of Afro-American language and speech. No previous training in linguistics is required.

Ms. Irvine

ANTHROPOLOGY 105aR. Ritual, Myth and Symbol

A study of the social dynamics of ritual behavior, mythology and symbolism in primitive society.

To be announced

ANTHROPOLOGY 109b. Archaeological Methods

Basic archaeological procedures for reconnaissance, excavation, and analysis of data; some important aspects of primitive technology; a survey of recently developed instruments and techniques for finding, dating, and analyzing ancient materials; and problems in archaeological theory.

Ms. Zeitlin

***ANTHROPOLOGY 110aR. Physical Anthropology**

ANTHROPOLOGY 111a. Primates

An intensive introduction to the study of non-human primates with emphasis on

ethnology and primate behavior. An enquiry into the evolution of human behavior from a primate matrix, and the use of living non-human primates in understanding the nature of modern man.

Mr. Horr

***ANTHROPOLOGY 112bR. Evolution and Natural Selection**

ANTHROPOLOGY 115aR. Culture and Biology

Selected problems in the nature of culture in the light of the biological bases of human behavior.

Mr. Horr

ANTHROPOLOGY 120b. The Anthropology of Law

See Legal Studies.

Mr. M. Davis

***ANTHROPOLOGY 122aR. The World Before**

***ANTHROPOLOGY 123a. Archaeology and Prehistory**

ANTHROPOLOGY 124aR. Civilizations of Mesoamerica

The development of complex societies in Mexico and Guatemala, their history, social and political institutions, art, religion, and literature. Most emphasis will be on the Olmecs, Maya, the Teotihuacan civilization of central Mexico and the Aztecs.

Mr. Zeitlin

***ANTHROPOLOGY 125b. Origins of East Asian Civilizations**

ANTHROPOLOGY 127a. The First Complex Societies and Cities

A comparative study of the origins and functioning of early urban societies and states. Social, political, economic, ideological, technical and ecological factors are emphasized. The aim is toward better understanding of developmental processes. Somewhat different examples are chosen in different years.

Prerequisite: Permission of the instructor.

Mr. Zeitlin

ANTHROPOLOGY 128a. Origins of African Culture

African prehistory from the earliest cultures of the Lower Pleistocene to the beginnings of historic states.

Mr. D. Davis

ANTHROPOLOGY 131. The Archaeology of Anatolia

See Mediterranean Studies 115.

Mr. Todd

ANTHROPOLOGY 133a. Modern Africa

An examination of indigenous societies of Africa. Ethnographic views of family, political, and religious organization will be considered in relation to an ecological and historical setting.

Ms. Irvine

ANTHROPOLOGY 135b. Peoples and Cultures of India

An introduction to patterns of thought and action in rural India, with special emphasis on Hindu communities.

Mr. M. Davis

ANTHROPOLOGY 140a. Prehistory of North American Indians

The prehistory of American societies from the Late Pleistocene to the European Conquest.

Mr. D. Davis

***ANTHROPOLOGY 141b. The American Indian**

ANTHROPOLOGY 144aR. Indians of South America

Readings in the literature of Indian populations in lowland South America.

*Mr. Saler***ANTHROPOLOGY 146a. Environment and Archaeology**

An examination of principles and analytical techniques from ecology and geology which are applicable to archaeological interpretation.

*Mr. D. Davis***ANTHROPOLOGY 151a. Social Organization I**

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis.

*Mr. Jacobson***ANTHROPOLOGY 151b. Social Organization II**A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students. *To be announced***ANTHROPOLOGY 152b. Economic Anthropology**

Economic institutions of non-industrial societies.

*Mr. Kaplan***ANTHROPOLOGY 153b. Ethnomusicology**

See Music 180b for description.

*Mr. Titcomb***ANTHROPOLOGY 154a. Comparative Religion**An exploration of belief and behavior in societies of non-literate peoples with reference to theories concerning the origins and functions of religion. *Mr. Saler****ANTHROPOLOGY 155b. Psychological Anthropology****ANTHROPOLOGY 156a. Political Anthropology**

Survey of anthropological theories of government, politics, conflict and social control. Students will do field research in local political contexts.

*Mr. M. Davis***ANTHROPOLOGY 158aR. Urban Anthropology**

Selected problems in the description and analysis of urban social organization.

*Mr. Jacobson****ANTHROPOLOGY 160b. An Anthropological Perspective on the Third World*****ANTHROPOLOGY 161b. Culture and Cognition*****ANTHROPOLOGY 165a. Modernization and Social Change****ANTHROPOLOGY 170a. Peasant Cultures: Past and Present**

Representative agrarian cultures will be dealt with in detail, with particular emphasis on the interrelationship among the city, the rural community and the state.

*Mr. Kaplan***ANTHROPOLOGY 171a. The Comparative Method**

A survey of the comparative method in anthropology. Special emphasis will be given to selected problems, e.g., units of analysis, data quality control, measuring covariation, validity of premises in concept systems.

*Mr. Hunt***ANTHROPOLOGY 175a. Pro-Seminar in Anthropological Theory: I**

Analysis of representative classics in anthropology.

Ms. Codere

ANTHROPOLOGY 175b. Pro-Seminar in Method of Cultural Anthropology: II

The development of anthropological theory, major present-day trends and their relation to problems of research.

Mr. Kaplan

ANTHROPOLOGY 177b. Archaeological Method and Theory**ANTHROPOLOGY 180b. Historical Anthropology****Primarily for Graduate Students****ANTHROPOLOGY 212a. Behavioral Anthropology I**

A seminar designed to combine materials from anthropology, human behavioral studies and primate behavior in an attempt to clarify selected aspects of human behavior.

Mr. Horr

ANTHROPOLOGY 212b. Behavioral Anthropology II

A continuation of Anthropology 212a.

Mr. Horr

ANTHROPOLOGY 226a and b. Readings in Research in Archaeology

Staff

ANTHROPOLOGY 227a and b. Readings in Research in Linguistics

Ms. Irvine

ANTHROPOLOGY 228a and b. Advanced Readings in Method and Theory

Mr. Kaplan

ANTHROPOLOGY 229a and b. Guided Comparative and Historical Research

Ms. Codere and Mr. Hunt

ANTHROPOLOGY 230a and b. Readings and Research on Culture of Hunters and Gatherers

Mr. D. Davis

ANTHROPOLOGY 231a and b. Readings in Cognitive Culture

Mr. Saler

ANTHROPOLOGY 235a and b. Readings and Research in Latin American Cultures

Mr. Hunt

ANTHROPOLOGY 236a and b. Readings and Research on East and South Asia

Ms. Robinson

ANTHROPOLOGY 237a and b. Readings and Research in African Cultures

Mr. Jacobson

ANTHROPOLOGY 238a and b. Readings and Research in Urban Anthropology

Mr. Jacobson

ANTHROPOLOGY 239a and b. Readings and Research in North American Indian Cultures

Mr. Manners

ANTHROPOLOGY 245a and b. Readings and Research in Physical Anthropology

Mr. Horr

ANTHROPOLOGY 300a and b. Seminar in Anthropological Field Work

Consideration of selected field studies. *Required of all graduate students.*

Mr. Jacobson

ANTHROPOLOGY 302. Summer Research Training

Field work for three months during the summer under the supervision of a member of the staff. *Staff*

ANTHROPOLOGY 304. Research in Archaeological Field Methods *Mr. D. Davis*

ANTHROPOLOGY 305. Anthropological Colloquium *Staff*

ANTHROPOLOGY 350a and b. Anthropological Review

ANTHROPOLOGY 400-410. Dissertation Research

Independent research for the Ph.D. degree.

400. <i>Ms. Codere</i>	406. <i>Mr. Manners</i>
401. <i>Mr. Cowgill</i>	407. <i>Mr. Kaplan</i>
402. <i>Mr. Jacobson</i>	408. <i>Ms. Robinson</i>
403. <i>Mr. Hunt</i>	409. <i>Mr. Saler</i>
404. <i>Mr. Horr</i>	410. <i>Mr. D. Davis</i>
405. <i>Ms. Irvine</i>	411. <i>Mr. M. Davis</i>



BIOCHEMISTRY

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip students with a broad understanding of the chemistry involved in biological processes and to train them to carry out independent original research. Although students will be primarily responsible for a comprehensive understanding of biochemical phenomena, they will be encouraged to acquaint themselves with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include metabolic regulation in normal and also tumor tissues, enzymology, immunochemistry, radiobiology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, photobiology, microbial metabolism, and organic biochemistry.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply here. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. It is strongly suggested that the applicant take one of the advanced sections (preferably chemistry or biology) of this examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

Faculty

Professor Robert H. Abeles, *Chairman:* Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations. Design of highly specific enzyme inactivators.

Professor Gerald D. Fasman: Conformation of biological macromolecules. Chromatin structure, protein-DNA interactions. Protein models; synthesis and conformational studies of polyamino acids.

Professor David M. Freifelder: Structure and function of DNA. Bacterial and phage genetics. Lysogeny.

Professor William P. Jencks: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salt and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor Lawrence Levine: Immunochemistry. Antibodies as analytical reagents for measuring antigen conformation and pharmacologically important molecules.

Professor John M. Lowenstein: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Regulation and function of the purine nucleotide cycle; regulation of adenosine production in heart.

Professor Susan Lowey: Structure and function of myofibrillar proteins and their relation to the muscle cell. Techniques will include physical chemistry, protein chemistry, fluorescence and electron microscopy.

Professor Alfred G. Redfield: Magnetic resonance in biopolymers. Physical biochemistry.

Professor Serge N. Timasheff: Physical chemistry of proteins, in particular, structure in solution and self-associations; self-assembling systems; ligand-mediated interactions; macromolecular properties of biological polymers.

Professor Helen Van Vunakis: Interaction of hallucinogenic, narcotic and carcinogenic compounds with specific antibodies and natural receptors. Protein structure. Photodynamic action of dyes on nucleic acids.

Associate Professor Thomas C. Hollocher Jr.: Role and mechanism of action of oxidation-reduction enzymes. Mechanism of denitrification. Biochemical aspects of environmental problems.

Associate Professor William T. Murakami: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.

Associate Professor Robert F. Schleif: Molecular biology. Mechanism of regulation in bacteria and their viruses.

Associate Professor Morris Soodak: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.

Assistant Professor Jen-Shiang Hong: Molecular biology of membrane functions and structure. Mechanism of active transport and oxidative phosphorylation in bacteria.

Assistant Professor Christopher Miller: Cellular physiology and biophysics. Membrane transport and mechanisms of electrical excitation.

Assistant Professor Pieter Wensink: Molecular biology. Gene expression during development of higher organisms. The physical arrangement of genes within the DNA and the chromosomes of higher organisms.

Degree Requirements

Doctor of Philosophy

Program of Study. Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, physical biochemistry and biochemical research problems, and four of the biochemistry seminars.

Language Requirement. A reading knowledge of German is required. This language requirement must be completed satisfactorily prior to the oral qualifying examination.

Qualifying Examinations. An oral qualifying examination must be taken generally at the beginning of the second year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization, and one will be an original proposition put forth by the student for a research problem in his or her area of interest (this is not necessarily a problem upon which he or she will carry out research).

In addition, the student will have an opportunity to demonstrate general knowledge of biochemistry in a series of three area examinations: physical biochemistry and macromolecules, metabolism and enzymology, and molecular biology. The first area examination will be held at approximately the same time as the proposition defense, and the second area examination at approximately the same time as the research report (see below). The third area can be defended at the same time as one of the first two or later. This general knowledge outside the student's own field of specialization must be demonstrated to the satisfaction of an advisory committee of four Department faculty members.

At this time it will be decided whether a student will continue working towards the Ph.D. degree or a Master of Arts degree.

Admission to Candidacy. At some time before the second semester of their third year, students will present to a committee of four members of the Department a summary of their research accomplished to date, including the most significant experimental data and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Doctor of Philosophy degree. After completion of the research report and the three area examinations at a level satisfactory for the Ph.D. degree, the student will be admitted to candidacy.

Dissertation and Defense. A dissertation will be required which summarizes the results of an original investigation of an approved subject and which demonstrates the competence of the candidate in independent research.

Courses of Instruction

BIOCHEMISTRY 100a. Introductory Biochemistry

Chemistry, reactions and metabolism of biologically important compounds. Formation and utilization of "energy-rich" compounds. Introduction to enzyme mechanisms. An attempt will be made to interrelate and compare basic biochemical and chemical processes.

Prerequisite: Chemistry 25a and b. *Messrs. Hollocher, Fasman and Murakami*

BIOCHEMISTRY 100aR. Introductory Biochemistry

Water and hydrogen bonds; acids, bases, buffers; structure and function of proteins; enzymes; kinetics of Michaelis-Menten and regulated enzymes; introduction to enzyme mechanisms; equilibria of enzyme reactions; the central role of ATP; glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation; regulation of metabolic pathways; adaptive enzymes and cellular aspects of protein synthesis; mechanism of action hormones. The class will be quizzed on its knowledge of molecular biology and extra lectures in this area will be included if required.

Mr. Lowenstein

BIOCHEMISTRY 101a and b. Advanced Biochemistry

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids. Regulated enzymes and the regulation of metabolism.

Prerequisites: Chemistry 25a and b, Biochemistry 100a or their equivalent.

Messrs. Abeles, Jencks, Lowenstein and Hollocher

BIOCHEMISTRY 102a. Immunochemistry

An introduction to the basic concepts of immunochemistry and immunology. Mode and mechanism of antibody synthesis and of antigen-antibody interaction; application of immunochemical methods to the estimation and characterization of proteins, polysaccharides, enzymes and hormones.

Prerequisite: Consent of the instructor.

Messrs. Levine and Nisonoff

BIOCHEMISTRY 103a. Advanced Molecular Biology

The general principles of molecular biology will be emphasized with respect to

nucleic acid biosynthesis, structure, and physiological involvement. In addition, a description of events dealing with control of genetic information will be outlined.

Mr. Schleif

BIOCHEMISTRY 104b. Introduction to Physical Biochemistry

Discussion of physical methods; molecular weight measurements, polyelectrolyte properties, structural and conformational analyses of various spectroscopic and X-ray techniques, macromolecular interactions, magnetic methods.

Messrs. Timasheff, Fasman, Redfield and Ms. Lowey.

First year Biochemistry graduate students will take 101, 103a and 104b concurrently.

BIOCHEMISTRY 200. Biochemistry Techniques

Prerequisite: Biochemistry 101. May be taken concurrently. *Mr. Hong and Staff.*

Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

BIOCHEMISTRY 217a. Microbial Synthesis of Antibiotics

Mr. Schleif

BIOCHEMISTRY 219b. Mechanism of Enzyme Action

Messrs. Abeles and Jencks

BIOCHEMISTRY 228a. Physical Biochemistry—Conformational Aspects

Messrs. Fasman, Timasheff and Ms. Lowey

BIOCHEMISTRY 230b. Molecular Pharmacology

Ms. Van Vunakis

BIOCHEMISTRY 401-418. Biochemical Research Problems

Independent research for the Ph.D. degree.

401. <i>Mr. Jencks</i>	410. <i>Mr. Soodak</i>
402. <i>Mr. Levine</i>	411. <i>Ms. Van Vunakis</i>
404. <i>Mr. Timasheff</i>	412. <i>Mr. Freifelder</i>
405. <i>Mr. Abeles</i>	413. <i>Mr. Hollocher</i>
406. <i>Mr. Fasman</i>	414. <i>Mr. Murakami</i>
407. <i>Mr. Lowenstein</i>	415. <i>Mr. Schleif</i>
408. <i>Mr. Wensink</i>	416. <i>Mr. Redfield</i>
409. <i>Ms. Lowey</i>	417. <i>Mr. Hong</i>
	418. <i>Mr. Miller</i>

Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the Department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, at which recent publications are discussed. Colloquia are general meetings of the Department in which both speakers from the Department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the Department.

BIOLOGY

Objectives

The graduate program in biology is designed to give students an understanding of the fundamental nature of living processes, and to train them to undertake original research.

The department rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, graduate students will report to the temporary graduate student adviser who will assist the student with formal entry into the department and later with their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor Andrew G. Szent-Gyorgyi, *Chairman*: Mechanism of muscle contraction.

Regulation of contractile proteins in both primitive and more advanced animals.

Professor Carolyn Cohen (Rosenstiel Center): Structure and function of protein assemblies in cells. X-ray diffraction and electron microscopy applied to muscle contraction, cell division and blood coagulation.

Professor Herman T. Epstein: Developmental changes in the brain in relation to learning in man and mouse.

Professor Chandler M. Fulton: Cell differentiation and selective gene expression in eucaryotic cells. Morphogenesis of cell shape and of cell organelles, especially flagella.

Professor Martin Gibbs (Photobiology Institute): Photosynthesis and plant physiology.

Professor Harlyn O. Halvorson (Director, Rosenstiel Center): Developmental changes in microorganisms. Control of macromolecular synthesis during the cell cycle and during sporulation in bacillus.

Professor Albert Kelner (Photobiology Institute): Genetics. Microbial genetics. Radiation biology.

Professor Alfred Nisonoff (Rosenstiel Center): Immunochemistry. Genetic control of the immune response.

Professor Jerome A. Schiff (Director, Photobiology Institute): Plant biochemistry and physiology. Photocontrol of intracellular development. Sulphur metabolism.

Associate Professor Attila O. Klein: Regulation of development in higher plants by light. Control of growth, organelle development and macromolecular synthesis in the leaf.

Associate Professor Gjerding Olsen: Animal physiology. Endocrinology.

Associate Professor Raymond E. Stephens: Chemistry of cell division. Biological motility. Larval development and ecology of marine organisms.

Assistant Professor James E. Haber (Rosenstiel Center): Control of meiosis sporulation-specific events in the yeast *Saccharomyces cerevisiae*. Genetic and biochemical studies of macromolecular synthesis, especially during development.

Assistant Professor Jeffrey C. Hall: Genetic and histochemical mosaic analysis of behavior mutants of *Drosophila melanogaster*.

Assistant Professor John E. Lisman: Mechanisms of excitation and adaptation in photoreceptors.

Assistant Professor Joan L. Press (Rosenstiel Center): Developmental immunology.

Assistant Professor Bryan E. Roberts: Molecular biology of viruses and eucaryotic cells.

Assistant Professor Michael Rosbash (Rosenstiel Center): Gene organization in eucaryotes. Macromolecular synthesis during oogenesis.

Assistant Professor Robert D. Stout (Rosenstiel Center): Cellular immunology.

Assistant Professor Judith E. Tsipis

Assistant Professor Kalpana P. White: Developmental neurobiology.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances only with the approval of the department staff.

Language requirement. All candidates are required to demonstrate a reading knowledge of French, German, or another foreign language acceptable to the department. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101b, 200a and b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his or her specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language requirement. A reading knowledge of French, German, or another language acceptable to the department, is required. This requirement must be met before the student completes the first year of graduate study.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed the foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his or her research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Courses of Instruction

BIOLOGY 100a and b. Photobiology

See Photobiology 100 a and b.

Messrs. Gibbs, Kelner and Schiff

***BIOLOGY 101b. Comparative Physiology of Animals**

BIOLOGY 102b. Structural Biology

An introduction to the physical concepts underlying cell architecture and function.

The first part of the course covers essential background including symmetry and assembly, methods of image formation (light and electron microscopy and X-ray diffraction), and protein structure. Biological systems then discussed will be protein assemblies governing cell form and division, muscle filaments and movement, membranes and chromatin. This course is designed for juniors and seniors majoring in the sciences and for first year graduate students.

Ms. Cohen

BIOLOGY 104b. Molecular and Cellular Basis of Development.

Gene expression and its control in the growth and development of microorganisms and metaplyte-metazoan cells in culture, with emphasis on eucaryotic cells. Programming and phenotypic expression in cell differentiation.

Prerequisite: Biology 40a.

Messrs. Hall and Rosbash

BIOLOGY 105b. Advanced Genetics

The purpose of this course is to consider topics which are dealt with, or at least mentioned, in introductory genetics, and go into them in depth and detail. There are two basic approaches to the problem areas: cytogenetics, and molecular genetics. Emphasis will be placed on problems currently under investigation.

Prerequisite: Biology 21 and 31.

To be announced.

***BIOLOGY 107a. Behavioral Genetics**

***BIOLOGY 108a. Vertebrate Endocrinology**

***BIOLOGY 110b. Physiology of Animal Photoreceptors**

BIOLOGY 112a. Immunochemistry

See Biochemistry 102a.

Messrs. Levine and Nisonoff

***BIOLOGY 120b. The Eucaryotic Genome**

BIOLOGY 124b. Animal Virology Seminar

A series of lectures and readings, with student participation, on some aspects of animal virology. Topics to be covered are: structure and function of the animal cell in culture; techniques and inhibitors used in virology; general survey of the structure and replication of the animal viruses; brief discussion of medical aspects of virology.

Ms. Tsipis

BIOLOGY 125b. Immunobiology

A discussion of the biological aspects of the immune response, including the properties of antibodies and lymphoid cells, and the mechanism of antibody formation.

Mr. Stout and Ms. Press

***BIOLOGY 140b. DNA Repair: Its Genetic and Evolutionary Aspects**

***BIOLOGY 150b. Advanced Seminar in Human Nutrition**

***BIOLOGY 200a. Molecular and Cellular Basis of Development**

BIOLOGY 202a. Experiments and Ideas in Cell Biology

This course is intended to introduce students to intelligent and analytical reading of research papers, and to learning and evaluating the recorded experience of others.

One or more aspects of experimental biology—any aspect on which a substantive literature exists is suitable—will be explored. Each paper will be read and discussed critically, evaluating the hypotheses being tested, the methods used, results obtained, conclusions drawn, and the validity of each, as well as the contribution of the paper to our knowledge of the subject. Each student will participate actively, and be subject to friendly but frequent criticism by faculty and other students. Library exploration will be expected.

Mr. Fulton

BIOLOGY 245a. Selected Topics in Plant Metabolism

See Photobiology 245a.

Mr. Gibbs

BIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

See Photobiology 245b.

Mr. Schiff

Courses in Research

BIOLOGY 300a and b. Biological Research

Primarily for the first year student with the purpose of introducing him or her to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Staff

BIOLOGY 400. Biophysics of Microorganisms

Mr. Epstein

BIOLOGY 401. Genetics and Microbiology

Mr. Kelner

BIOLOGY 402. Molecular Biology of Microorganisms

Mr. Halvorson

BIOLOGY 403. Immunochemistry: Genetic Control of the Immune Response

Mr. Nisonoff

BIOLOGY 404. Developmental Neurobiology

Ms. White

BIOLOGY 405. Cell Differentiation and Morphogenesis

Mr. Fulton

BIOLOGY 407. Structural Aspects of Contractile Systems, Cell Division and Blood Coagulation

Ms. Cohen

BIOLOGY 408. Behavioral Genetics

Mr. Hall

BIOLOGY 409. Biophysics of Visual Transduction

Mr. Lisman

BIOLOGY 410. Plant Development

Mr. Klein

BIOLOGY 411. Cytology

Mr. Stephens

BIOLOGY 413. General Physiology

Mr. Szent-Gyorgyi

BIOLOGY 414. Gene Organization in Eucaryotes. Macromolecular Synthesis During Oogenesis

Mr. Rosbash

BIOLOGY 415. Biochemistry and Genetics of Differentiation

Mr. Haber

BIOLOGY 416. Molecular Biology of Viruses and Eucaryotic Cells

Mr. Roberts

BIOLOGY 417. Cellular Immunology

Mr. Stout

BIOLOGY 418. Developmental Immunology

Ms. Press

Biology Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialities. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

INSTITUTE FOR PHOTOBIOLOGY OF CELLS AND ORGANELLES

Objectives

The graduate program of the Institute is designed to give students an understanding of the photobiology of cells and organelles as part of the fundamental nature of living processes, and to train them to undertake original research in these areas.

The Institute rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology or biochemistry at this institution. These are: general biology, genetics, cell physiology and biochemistry, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies, must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitting to the Institute, graduate students will be advised and aided in planning their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research.

Faculty

Professor Jerome A. Schiff, *Director:* Plant biochemistry and physiology. Photo-control of intracellular development. Sulphur metabolism.

Professor Martin Gibbs: Photosynthesis and plant physiology.

Professor Albert Kelner: Genetics. Microbial genetics. Radiation biology.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the Institute. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the Institute. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the Director of the Institute for a permanent adviser to be assigned by the Institute. This adviser will serve as the chairman of a committee which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

The thesis problem may be waived under exceptional circumstances and only with the approval of the Institute staff.

Language Requirement. All candidates are required to demonstrate a reading knowledge of French, German, or other foreign language acceptable to the Institute. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and biochemistry, and development, as well as courses in physics, and chemistry related to photobiology, before taking the qualifying examination. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his or her specific field of interest and will apply to the Director of the Institute for a permanent adviser to be assigned by the Institute before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language Requirements. A reading knowledge of French, German or another language acceptable to the Institute is required. This requirement must be met before the student completes the first year of graduate study.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit four propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the Institute. The student will be examined orally on at least three of the acceptable propositions by the three members of the propositions committee plus additional faculty members as needed.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed the foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy. With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the Director of the Institute. It will consist of at least three staff members headed by the student's permanent adviser. This committee will guide his or her research activities toward the doctoral dissertation and will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Courses of Instruction

PHOTOBIOLOGY 100a and b. Photobiology of Cells and Organelles

Basic photobiology including an introduction to the physical and chemical concepts involved, the influence of the changing solar spectrum on the course of evolution, the catalytic uses of light by living systems including photoperception (phototropism, phototaxis and the evolution of visual systems), photomorphogenesis (blue light and re-far red systems), photoinduced rhythms, and other biological responses to light, energy storage including the photosynthetic apparatus, membranes and reaction centers, photosynthetic electron transport and phosphorylation, photosynthetic carbon metabolism and photoreduction, utilization of assimilatory power in reductive reactions, the deleterious effects of light including photodynamic action, photoprotection, erythema effects, ultraviolet damage to the genetic material and its photorepair and the evolution of repair systems and medical applications.

Prerequisites: Cell biology or its equivalent. Permission of the instructor.

Messrs. Gibbs, Kelner and Schiff

***PHOTOBIOLOGY 140b. DNA Repair: Its Genetic and Evolutionary Aspects**

PHOTOBIOLOGY 245a. Selected Topics in Plant Metabolism

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Prerequisite: Permission of the instructor.

Mr. Gibbs

PHOTOBIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

A continuation of Photobiology 245a.

Prerequisite: Permission of the instructor.

Mr. Schiff

PHOTOBIOLOGY 401. Photobiological Aspects of Genetics and Microbiology

Mr. Kelner

PHOTOBIOLOGY 406. Photobiology and Plant Physiology

Mr. Schiff

PHOTOBIOLOGY 412. Photobiochemistry and Plant Metabolism

Mr. Gibbs

Institute Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

BIOPHYSICS

Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to provide a broad background in the physics and chemistry of living processes and to develop the students' capacity for independent research. The program offers opportunity for study and research in biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics and structural biology. Applicants are expected to have strong backgrounds in physical science with undergraduate concentrations in biology, chemistry, mathematics, physics or engineering.

Admission

The general requirements for admission to the Graduate School are given in an earlier section of this catalog. Applications should include, in addition to letters of reference, a personal statement giving reasons for choosing biophysics and indicating areas of interest. Applicants are required to take the Graduate Record Examination and are encouraged to visit Brandeis for interviews, if possible.

Faculty

Professor Carolyn Cohen, (Biology), *Chairwoman*; Professors Henry Linschitz (Chemistry) and Serge Timasheff (Biochemistry); Associate Professor David J. DeRosier (Physics).

Degree Requirements

Doctor of Philosophy

Program of Study. Since Biophysics is a very broad field and students may have widely different backgrounds and goals, the course of study is flexible. Courses, seminars and research facilities of the entire School of Science may be used in planning each student's program in accord with his or her individual background and scientific interests. During the first year students take Biophysics 300, a course in which students meet with selected faculty members to explore areas of research.

Language Requirements. Reading knowledge of two foreign languages, chosen from French, German and Russian. A knowledge of computer programming may be substituted for the second language.

Admission to Candidacy. Students are admitted to candidacy on the basis of academic performance and on a research proposal that they develop and defend. This proposal may be written during the course Biophysics 200b. Students passing this course but not admitted to candidacy may qualify for a master's degree.

Dissertation and Defense. Each doctoral candidate will submit a dissertation describing his or her research and will be required to defend it in a Final Oral Examination.

Courses of Instruction

BIOPHYSICS 101a and b. Biophysical Optics

See Physics 37a and b.

Mr. DeRosier and Mr. Lange

BIOPHYSICS 102b. Structural Biology

See Biology 102b.

*Ms. Cohen***BIOPHYSICS 104b. Introduction to Physical Chemistry**See Biochemistry 104b. *Messrs. Timasheff, Fasman, Redfield and Ms. Lowey***BIOPHYSICS 152b. Biological Assembly**

See Physics 152b.

*Mr. Casper***BIOPHYSICS 200b. Seminar in Biophysical Research**

A required seminar for Biophysics majors which will deal with current biophysical research. Emphasis is on the understanding, critical evaluation and use of scientific literature. Students will discuss topics from the areas of biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics and structural biology, based on the reading of significant articles. In consultation with the faculty, each student will develop a research proposition based on independent reading and will prepare a research plan in the form of a thesis proposal.

*Ms. Cohen and Mr. DeRosier***BIOPHYSICS 300. Introduction to Research in Biophysics**

Students participate for a number of months in the research groups of about three faculty members selected according to the student's interest from the departments of biochemistry, biology, chemistry and physics.

Staff

CHEMISTRY

Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry and in chemical-physics. (Detailed information on the interdisciplinary specialization in chemical physics is found on page 64). All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, this to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine if the student shall be required to make up deficiencies in prepara-

tion. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study and in determining a student's eligibility to continue in a degree program.

Faculty

Professor Kenneth Kustin, Chairman: Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; bioinorganic chemistry.

University Professor Saul G. Cohen: Chemistry of free radicals; organic photochemistry; specificity and mechanism of reactions of enzymes.

Professor Paul B. Dorain: Electron paramagnetic resonance; exchange interactions, electron phonon interactions and optical spectra of crystalline materials.

Professor Sidney Golden: Quantum theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation; physical chemistry of metal-ammonia solutions; quantum statistical inequalities, equilibrium and time-dependent.

Professor Ernest Grunwald: Solution chemistry; proton transfer reactions; electric dipole moments in polar liquids; infrared laser chemistry.

Professor James B. Hendrickson: Synthesis of natural products; stereochemistry and molecular geometry; synthesis design systematics and development of new synthetic reactions.

Professor Henry Linschitz: Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution of properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.

Professor Myron Rosenblum: Reaction mechanisms; molecular rearrangements; organometallic chemistry of the transition elements.

Professor Robert Stevenson: Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.

Associate Professor Irving R. Epstein: Use of quantum mechanics to elucidate molecular properties; chemistry of electron-deficient compounds; theoretical approaches to Compton scattering, photochemistry, and oscillating chemical reactions.

Associate Professor Michael J. Henchman: Gas kinetics under "single collision" conditions; dynamics of molecular collision processes.

Associate Professor Peter C. Jordan: Statistical mechanical theory of cooperative phenomena; non-equilibrium statistical mechanics and thermodynamics; applications of quantum mechanics to molecular spectroscopy.

Associate Professor Colin Steel: Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

Associate Professor Thomas R. Tuttle Jr.: Chemistry of liquid solutions; the composition and structures of species in metal solutions in polar solvents; application of spectroscopy, e.g., magnetic resonance, optical and spectropolarimetry, to elucidation of the composition and structure of solutions.

Assistant Professor Iu-Yam Chan: Optically detected magnetic resonance, time resolved magnetic resonance, EPR and ENDOR.

Assistant Professor Bruce M. Foxman: X-ray structure determination; chemical, physical and crystallographic studies of solid-state reactions.

Assistant Professor Philip M. Keehn: Synthetic methods. Organic synthesis of strained rings and theoretically interesting molecules. Application of nmr spectroscopy to organic systems. Photooxidation. Laser chemistry.

Assistant Professor Ronald J. Parry: Biosynthesis of natural products; stereochemical aspects of enzyme mechanisms.

Degree Requirements

Detailed information on the interdisciplinary specialization in chemical physics is found on page 65.

Entering students may be admitted to either the Master's or the Doctoral program.

All candidates for advanced degrees are required to meet the following requirements:

Qualifying Examination. These examinations are set twice a year, in September and January, and are based on the undergraduate chemistry curriculum. Students are required to take and are expected to pass qualifying examinations in organic, inorganic-analytical and physical chemistry during their first year.

Recommendations with respect to the first-year course of study will be based on the performance on the qualifying examinations. Admission to the graduate degree programs will be based on the student's record in course work during the first year and the performance on the qualifying examinations.

Language Requirements. Each student is obliged to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar. Each student in residence is required to attend and participate in the seminar in his or her chosen area of concentration throughout the period of graduate study.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

Program of Study. Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The program will include laboratory work and, normally, six semester courses at the graduate level. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as a perspective of other areas.

Residence Requirements: The minimum residence requirement for the M.A. degree is one year.

Doctor of Philosophy

Program of Study. A balanced program of study will be prepared jointly by the student and the Departmental Graduate Studies Committee. This will normally include a basic core of course work in the student's area of interest and later more specialized courses appropriate to it. It is expected that doctoral students will choose a research adviser during the first year, normally in the second semester. A student who satisfactorily completes the first year of study in the Doctoral program qualifies for the Master's degree.

Admission to Candidacy. A student is recommended for admission to candidacy for the doctoral degree upon certification by his or her thesis adviser and the Graduate Studies Committee that the student has passed the qualifying and language examinations and has made satisfactory progress in the program of study and the final Ph.D. examinations.

Final Examinations. The graduate student must demonstrate proficiency by taking final examinations in his or her major field, organic, physical-organic, physical, or inorganic chemistry. In organic chemistry, students are required to pass eight cumulative examinations, given monthly on unannounced topics. Students normally begin these examinations after they begin research and are expected to maintain reasonable progress toward completion. In physical-organic chemistry, final examinations are administered twice a

year and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he or she takes a written examination on one proposition, and is examined orally on his or her proposed research project and the remaining proposition.

Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Courses of Instruction

*CHEMISTRY 110b. Instrumental Chemical Analysis

CHEMISTRY 121a. Inorganic Chemistry I, Lectures

Introduction to the principles of chemical binding; valence theory, periodic properties, molecular structures. Application chiefly to the chemistry of the lighter and non-metallic elements.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.
Three lecture hours a week.

Mr. Foxman

*CHEMISTRY 122b. Inorganic Chemistry II, Lectures

*CHEMISTRY 123b. Nuclear Chemistry

*CHEMISTRY 129b. Inorganic Chemistry Laboratory

CHEMISTRY 130a. Advanced Organic Chemistry: Structure

Introduction to group theory and its application to molecular orbital theory and spectroscopy.

Mr. Rosenblum

CHEMISTRY 131a. Advanced Organic Chemistry: Topics in Structure and Reactivity

The topic for 1976-77 will be the elucidation of structure and reactions of the Bisarylpropanoid Group of natural products.

Mr. Stevenson

CHEMISTRY 132b. Advanced Organic Chemistry: Spectroscopy

Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

Prerequisite: Satisfactory grade in Chemistry 130a or permission of instructor.

Mr. Keehn

*CHEMISTRY 133b. Advanced Organic Chemistry: Mechanisms

Kinetics, stereochemistry and mechanisms of selected organic reactions.

Prerequisites: Satisfactory grade in undergraduate courses in organic and physical chemistry.

***CHEMISTRY 134b. Advanced Organic Chemistry: Synthesis**

CHEMISTRY 141a and b. Advanced Physical Chemistry I

Classical, statistical, irreversible thermodynamics and chemical kinetics. Properties of real systems: gases, phase stability, chemical equilibrium and solutions. Statistical equilibrium, ensembles and fluctuations. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Rate laws and approach to equilibrium; scattering and energy transfer. Gas and solution kinetics. Surface reactions.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Mr. Jordan, 1st term

Mr. Henchman, 2nd term

CHEMISTRY 142b. Advanced Physical Chemistry II

Quantum mechanics: waves and wave packets, operator methods, Schrodinger's equation, simple model systems, angular momenta, perturbation theory and variational principle.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Mr. Tuttle

CHEMISTRY 143a. Advanced Physical Chemistry II

A continuation of Chemistry 142b. Quantum chemistry: spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics.

Prerequisite: Satisfactory grade in Chemistry 142b or the equivalent. *Mr. Golden*

CHEMISTRY 144a. Structure and Spectroscopy

Interaction of radiation with matter and its relevance to molecular structure. Topics will be selected from: X-ray and electron diffraction; microwave, nmr, infra-red, visible and ultraviolet absorption; molecular beam and mass spectrometry.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Mr. Chan

BIOCHEMISTRY 100a and 100aR. Introductory Biochemistry

See Biochemistry 100a for description.

Messrs. Hollocher, Murakami and Fasman, 1st term

Mr. Lowenstein, 2nd term

CHEMISTRY 200. Advanced Chemistry Laboratory

Staff

CHEMISTRY 220c. Inorganic Chemistry Seminar

Required of graduate students in inorganic chemistry, who must audit this course each year.

Mr. Foxman

***CHEMISTRY 221a. Advanced Inorganic Chemistry I**

***CHEMISTRY 222b. Advanced Inorganic Chemistry II**

***CHEMISTRY 229b. Special Topics in Inorganic Chemistry**

CHEMISTRY 231c. Organic Chemistry Seminar

Required of graduate students in organic chemistry, who must audit this course each year.

Staff

***CHEMISTRY 232b. Chemistry of Heterocyclic Compounds**

Prerequisite: Satisfactory grade in Chemistry 131 or the equivalent.

CHEMISTRY 233b. The Biosynthesis of Natural Products

An introduction to the experimental investigation of natural product biosynthesis via radio tracer techniques; a discussion of current knowledge regarding the biosynthesis of alkaloids, terpenes, and acetogenins.

Mr. Parry

***CHEMISTRY 234b. Chemistry of Organometallic Compounds**

Prerequisite: Chemistry 130a or the equivalent.

CHEMISTRY 235a. Special Topics in Organic Chemistry: Synthesis Design

Mr. Stevenson

***CHEMISTRY 235b. Special Topics in Organic Chemistry**

***CHEMISTRY 237b. The Chemistry of Natural Products**

CHEMISTRY 240c. Physical-Organic Chemistry Seminar

Required of graduate students in physical-organic chemistry, who must audit this course each year.

Staff

CHEMISTRY 241c. Physical Chemistry Seminar

Required of graduate students in physical chemistry, who must audit this course each year.

Staff

***CHEMISTRY 243a. Statistical Thermodynamics**

***CHEMISTRY 244a. Special Topics in Physical Chemistry**

***CHEMISTRY 244b. Special Topics in Physical Chemistry Excitons Processes**

CHEMISTRY 245a. Physical Organic Chemistry

A quantitative discussion of rates and equilibria of organic reactions.

Mr. Steel

***CHEMISTRY 248a. Advanced Quantum Chemistry**

CHEMISTRY 250c. Chemical Physics Seminar

Required of graduate students in chemical physics who must audit this course each year.

Staff

CHEMISTRY COLLOQUIUM

Lectures by faculty and invited speakers. Required of all graduate students. *Non-credit.*

Courses in Research

CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry

Reaction mechanisms; photochemistry; enzyme reactions; free radicals; radiation chemistry.
Mr. Cohen

CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, bisarylpropanoids.
Mr. Stevenson

CHEMISTRY 403. Organic Chemistry

Non-benzenoid aromatics: molecular rearrangements; reaction mechanisms; organometallic reagents in organic synthesis.
Mr. Rosenblum

CHEMISTRY 404. Organic Chemistry

Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions.
Mr. Hendrickson

CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions; quantum statistical inequalities.
Mr. Golden

CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes.
Mr. Linschitz

CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; optical spectra; solid state chemistry. *Mr. Dorain*

CHEMISTRY 408. Physical Chemistry

Faraday effect of small ions in solution. The study of chemical equilibria and processes by means of magnetic resonance spectroscopy. Optical spectra of metal solutions in polar solvents.
Mr. Tuttle

CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions by the temperature-jump and other relaxation techniques; trace metals in marine organisms.
Mr. Kustin

CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.
Mr. Steel

CHEMISTRY 412. Physical and Physical Organic Chemistry

Solution chemistry; proton transfer reactions; electric dipole moments in polar liquids; infrared laser chemistry.
Mr. Grunwald

CHEMISTRY 413. Physical Chemistry

Theory of fluids; theory of non-equilibrium processes; properties of ferrofluids; analysis of molecular spectra.

Mr. Jordan

CHEMISTRY 414. Physical Chemistry

Cross-sections, dynamics and lifetimes of ion-neutral collision processes in the gas phase using beam techniques; charge transfer; elastic and inelastic scattering.

Mr. Henchman

CHEMISTRY 415. Physical Chemistry

Quantum mechanical calculations of molecular properties; molecular momentum distributions; Compton scattering and X-ray diffraction; photochemistry, oscillating chemical reactions.

Mr. Epstein

CHEMISTRY 416. Physical Chemistry

Application of optically detected magnetic resonance, time resolved magnetic resonance, EPR and ENDOR to the investigation of organic triplet state molecules and inorganic crystals containing ions and/or color centers.

Mr. Chan

CHEMISTRY 417. Organic Chemistry

Organic synthesis of strained ring and theoretically interesting molecules; synthetic methods; application of nuclear magnetic resonance spectroscopy to organic systems; photooxidation; thermal chemistry; laser chemistry.

Mr. Keehn

CHEMISTRY 418. Organic Chemistry

Studies of natural product biosynthesis and of the stereochemistry of enzyme mechanisms; radioactive tracers.

Mr. Parry

CHEMISTRY 419. Inorganic Chemistry

X-ray structure determination; reactions in crystals; kinetics, mechanisms, and crystallography of rearrangement, polymerization, and decomposition reactions in the solid-state.

Mr. Foxman

Ph.D. in Chemistry with Specialization in Chemical Physics

The graduate program in chemical physics is an interdisciplinary specialization designed to meet the needs of students who wish to prepare themselves for the study of scientific problems using the methods and theories of modern physics and physical chemistry. This objective is attained by (1) formal course work in chemistry, physics and, possibly, mathematics; (2) participation in relevant graduate seminars; (3) a program of supervised research involving chemical physics; (4) independent study.

The program is designed to be flexible in providing individual programs of study to satisfy the particular interests and needs of each student. Final programs of study and research will be jointly arrived at by the student, his or her research supervisor and the Chemical Physics Committee. Only candidates for the Ph.D. will be accepted.

Admission

The general requirements for admission to the Graduate School apply to candidates for admission to the graduate program in chemical physics. Applicants should have a strong undergraduate background in chemistry, physics and mathematics.

Degree Requirements

All candidates for the Ph.D. degree in Chemistry with specialization in chemical physics must meet the following requirements:

Qualifying Examinations. Each student is expected to demonstrate a satisfactory knowledge of undergraduate chemistry, physics and mathematics by the performance in three qualifying examinations; one each in physical chemistry, organic or inorganic/analytical chemistry and physics/mathematics. These examinations are set two times a year, in September and January. Results of these examinations will be used as an aid in constructing the student's initial program of course work and will be considered by the Chemical Physics Committee in evaluating the student's progress.

Language Requirements. Each student is required to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar. Each student in residence is required to attend and to participate in the Chemical Physics Seminar. Participation in other seminars in physics and chemistry is also recommended.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

No master's degree is offered with specialization in chemical physics, but students who satisfy the appropriate requirements will be eligible for the M.A. degree in chemistry.

Doctor of Philosophy

Program of Study. It is expected that some candidates for the Ph.D. degree in chemistry with specialization in chemical physics may require a longer period of time in course work than will students in either of the fields of physics or chemistry. In general, the program for the Ph.D. in chemistry with specialization in chemical physics will include eight semester graduate courses: four in physical chemistry, one in either organic or inorganic chemistry and three in physics. No specific course work in mathematics is required, but students are expected to be familiar with the techniques necessary for the proper pursuit of their research. In addition, each student is expected to demonstrate a knowledge of elementary computer programming.

Students may satisfy their program's course requirements in part or in entirety by passing (or giving evidence of ability to pass) the final examination in the appropriate number of such courses. Courses in areas related to chemistry and physics may also be considered by the Chemical Physics Committee in partial fulfillment of the requirements.

Admission to Candidacy. Students are recommended for admission to candidacy for the doctoral degree upon certification by their thesis adviser and the Chemical Physics Committee that they have passed the qualifying and language examinations and have made satisfactory progress in the program of study and the final Ph.D. examination.

Final Examinations. Final examinations in chemical physics are generally taken during the third semester of graduate work. The student is assigned a set of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two.

Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

CLASSICS

See Joint Program of Literary Studies (page 89).

COMPARATIVE HISTORY

Objectives

The graduate program in comparative history, leading to the degree of Doctor of Philosophy in History, has been designed to train students in the comparative approach, which is the essence of the best historical scholarship. Comparative history is the conceptualization and study of the past according to political, social, economic, cultural and psychological categories that transcend traditional period and national divisions.

These define its range of possibilities, and provide a framework of reference for it within which unsuspected facts and connections emerge and the exceptional can be distinguished from the commonplace. Every historical study is necessarily comparative in that its specific subject (that particular peasant revolt, or religious revival, or decline in mortality) can be grasped only as it seems to be following a regular or irregular course of development. Our program attempts to impart this understanding directly and to make the comparative approach an explicit and systematic part of professional training, open to all five continents and all historic time.

A small select student body will work in close cooperation with the faculty. All teaching will be done in small seminars and tutorials. Individual programs of study will be developed from the beginning of the students' graduate work in comparative history to prepare them for their qualifying examination and to guide them toward their dissertation research.

The program will concentrate on the comparative history of Western Europe, but students will be strongly encouraged to examine the patterns of European history in comparison with those of American civilization, Eastern Europe, Latin America, Africa and the Near and Far East.

Students in the program will be trained in two fields: one a very broad chronological field, the other a topical or category field. The three chronological fields or periods are: (1) medieval Europe 300-1500, (2) early modern 1400-1815, (3) modern Europe 1750-present. Students will elect one of these periods and will be allowed to concentrate on more narrowly defined eras and areas within the chosen field.

The student will choose, under guidance, a category of comparative historical inquiry and will be required to study it throughout the whole of European history and, within practical limits, in other civilizations.

It is expected that the doctorate will be earned within four years from entering the program. The maximum time allowed will be six years.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Only doctoral candidates will be accepted. Students who have had a sound preparation in history and the social sciences and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the social sciences or in comparative literature may also apply. Applicants should submit a sample of written work, preferably in European history.

Faculty

Associate Professor John E. Schrecker, *Chairman*: Modern Asian history. Nationalism. Imperialism.

Professor Geoffrey Barraclough: Modern and contemporary history. Political institutions. Historiography.

Professor David S. Berkowitz: Early modern history. Bibliography, humanism, the Reformation and political thought.

Professor Rudolph Binion: Modern history. Culture and thought. Psychohistory. Political and social thought.

Professor Eugene C. Black: Modern history. Political and social institutions.

Professor John P. Demos: Early modern history. Social institutions.

Professor David H. Fischer: Modern history. Social institutions.

Professor Milton I. Vanger: Modern Latin American history. Political institutions.

Assistant Professor Gregory L. Freeze: Modern history. Eastern Europe. Political and social institutions.

Instructor John F. R. Coughlan: Medieval history. Social and cultural institutions.

Degree Requirements

Master of Arts

An M.A. degree in History will be awarded to those students who have satisfactorily completed one year of residence at full time, fulfilled the language requirement and have passed a qualifying examination at the Master's level.

Doctor of Philosophy

Each student will be assigned to a member of the faculty who will be a period supervisor. In addition, students will work independently with other assigned faculty members who will help define the category field.

Program of Study. During the first two years in the program, students will take four courses each term, divided between seminars and supervised independent study or reading courses.

The third year in the program will, when feasible, be spent abroad pursuing research for the dissertation. Arrangements will be made for conferences with foreign scholars who can advise on the subject of the research.

Language Requirement. The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass at least one language examination upon admission, the second one before registration for the third semester. Language requirements are:

Medieval: French, German, Latin

Early Modern and Modern: French and German

Students with any language deficiency must remedy it during the summer prior to admission. The Latin examination will presume the equivalent of two years of college work; French and German require a capacity to read standard historical prose.

Qualifying Examination. The student is expected to take the qualifying examination at the end of the second year of study and will be examined on his or her period, and category field. Any student who has not completed the qualifying examination by the sixth semester will be dropped from the program.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he or she has completed course and residence requirements, has demonstrated proficiency in the required foreign languages, has passed the qualifying examination and has gained approval of his or her dissertation topic by the faculty of the program.

Dissertation and Defense. The student will normally define a dissertation topic in the term preceding the qualifying examination but in no case later than the end of the fifth semester in the program. When the completed dissertation has been accepted by the student's dissertation committee, the candidate will defend it at a final oral examination.

Courses of Instruction

Seminars

*COMPARATIVE HISTORY 201a. Introduction to Modern Historical Methods

An examination of major recent trends in historical research.

Required of all first-year students.

COMPARATIVE HISTORY 202a. Seminar in Comparative History

Introduction to the methods of Comparative History through a consideration of the institution, structure and psychology of the family in various historical contexts.

Required of all first-year students.

Messrs. Binion and Schrecker

COMPARATIVE HISTORY 202b. Seminar in Comparative History

Required of all first-year students.

Staff

COMPARATIVE HISTORY 204b. Readings in Early Modern European History

Required of first-year students in Early Modern European History. To be announced

COMPARATIVE HISTORY 205b. Readings in Modern European History

Required of first-year students in Modern European History.

Mr. Black

COMPARATIVE HISTORY 301a and b—309a and b. Research papers

301a and b.	<i>Mr. Barraclough</i>	306a and b.	<i>Mr. Fischer</i>
302a and b.	<i>Mr. Berkowitz</i>	307a and b.	<i>Mr. Schrecker</i>
303a and b.	<i>Mr. Binion</i>	308a and b.	<i>Mr. Vanger</i>
304a and b.	<i>Mr. Black</i>	309a and b.	<i>Mr. Freeze</i>
305a and b.	<i>Mr. Demos</i>		

COMPARATIVE HISTORY 321a and b—329a and b. Period Field Reading

321a and b.	<i>Mr. Barraclough</i>	326a and b.	<i>Mr. Fischer</i>
322a and b.	<i>Mr. Berkowitz</i>	327a and b.	<i>Mr. Schrecker</i>
323a and b.	<i>Mr. Binion</i>	328a and b.	<i>Mr. Vanger</i>
324a and b.	<i>Mr. Black</i>	329a and b.	<i>Mr. Freeze</i>
325a and b.	<i>Mr. Demos</i>		

COMPARATIVE HISTORY 341a and b—349a and b. Category Field Reading

341a and b.	<i>Mr. Barraclough</i>	346a and b.	<i>Mr. Fischer</i>
342a and b.	<i>Mr. Berkowitz</i>	347a and b.	<i>Mr. Schrecker</i>
343a and b.	<i>Mr. Binion</i>	348a and b.	<i>Mr. Vanger</i>
344a and b.	<i>Mr. Black</i>	349a and b.	<i>Mr. Freeze</i>
345a and b.	<i>Mr. Demos</i>		

COMPARATIVE HISTORY 401—409 Dissertation Research

401.	<i>Mr. Barraclough</i>	406.	<i>Mr. Fischer</i>
402.	<i>Mr. Berkowitz</i>	407.	<i>Mr. Schrecker</i>
403.	<i>Mr. Binion</i>	408.	<i>Mr. Vanger</i>
404.	<i>Mr. Black</i>	409.	<i>Mr. Freeze</i>
405.	<i>Mr. Demos</i>		

COMPARATIVE HISTORY 500. Registration in Time

In addition, the following courses may be taken as equivalent to Comparative History seminars.

HISTORY 110a.	The Civilization of the Early Middle Ages	<i>To be announced</i>
HISTORY 110b.	The Civilization of the High and Late Middle Ages	<i>To be announced</i>
HISTORY 121a.	Humanism in Europe	<i>Mr. Berkowitz</i>
HISTORY 123aR.	Art and Culture in the Italian Renaissance	<i>Mr. Berkowitz</i>
*HISTORY 123b.	The Reformation	
HISTORY 124a.	Topics in English Constitutional History (Seminar)	<i>Mr. Berkowitz</i>
HISTORY 124b.	Topics in Historical Jurisprudence: The English System of Law	<i>Mr. Berkowitz</i>
*HISTORY 126a.	Revolts and Revolutions in Seventeenth-Century Europe	
*HISTORY 126b.	The Impact of Calvinism and Puritanism in Early Modern Europe	
*HISTORY 128a.	The Development of the European City to 1800 (Seminar)	
*HISTORY 128b.	Topics in Urban History: The Renaissance in Florence	
HISTORY 129aR.	An Introduction to European Social History	<i>To be announced</i>
*HISTORY 130a.	The French Revolution	
HISTORY 131bR.	Topics in Modern Social History	<i>Mr. Black</i>
HISTORY 132a.	Intellectual History of Modern Europe (1637-1863)	<i>Mr. Binion</i>
HISTORY 132b.	Intellectual History of Modern Europe, 1857 to the Present	<i>Mr. Binion</i>
*HISTORY 134a.	Modern Europe: A Biographical Approach	
*HISTORY 135aR.	European Socialism Since Babeuf	
HISTORY 136a.	Europe in the Age of Nationalism and Imperialism, 1870-1920	<i>Mr. Barraclough</i>
HISTORY 136b.	The World Since 1929	<i>Mr. Barraclough</i>
*HISTORY 137b.	Imperialism	
*HISTORY 140b.	The Tudor Revolution	
*HISTORY 141b.	Studies in British History - 1851 to the Present	
*HISTORY 142a	The Spanish Civil War	
*HISTORY 144b.	France 1914-1940 (Seminar)	
HISTORY 146b.	Topics in German History: Hitler, Germany and Europe	<i>Mr. Binion</i>

HISTORY 147a.	Rise of Imperial Russia	<i>Mr. Freeze</i>
HISTORY 147b.	History of Russia Since 1861	<i>Mr. Freeze</i>
*HISTORY 148a.	Revolutionary Russia, 1890-1917	
*HISTORY 149b.	Culture and Thought in Imperial Russia, 1830-1880	
HISTORY 171a.	Latin American History, Conquest to 1890	<i>Mr. Vanger</i>
HISTORY 171b.	Latin American History: 1890 to Present	<i>Mr. Vanger</i>
*HISTORY 173a.	The Family in Latin America	
HISTORY 173b.	The World and Latin America	<i>Mr. Vanger</i>
*HISTORY 174aR.	The Contemporary Novel and Latin American Reality	
*HISTORY 180aR.	Modern China (Seminar)	
HISTORY 181b.	Seminar on Chinese Thought	<i>Mr. Schrecker</i>
*HISTORY 182b.	Modern Southeast Asian History	
*HISTORY 190a.	Historiography	
*HISTORY 192a.	Comparative Political Theory: China and Europe	
HISTORY 193b.	The United States and Great Britain: Comparative Perspectives, 1830-1930	<i>Messrs. Black and Keller</i>
HISTORY 194a.	An Introduction to Historical Geography	<i>Mr. Barraclough</i>

COMPARATIVE LITERATURE

See Joint Program of Literary Studies (page 89).

CONTEMPORARY JEWISH STUDIES

Objectives

The graduate program in Contemporary Jewish Studies offers training for students interested in professional careers in the Jewish community and seeks to advance the field of contemporary Jewish studies. There are three concentrations:

1. Jewish communal service (Hornstein Program)
2. Jewish education
- 3 Research in contemporary Jewish life

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Contemporary Jewish Studies program. In addition, applicants are expected to submit results of either

the Graduate Record Examination or the Miller Analogies Test; a statement which describes the applicant's Jewish training and background and future plans; and a sample of written material. Applicants are encouraged to arrange for a personal interview.

Faculty

Associate Professor Leon A. Jick, Director: American Jewish history.

Associate Professor Bernard Reisman, Associate Director: American Jewish communal service.

Professor Leonard J. Fein: Jewish social policy. Social change. Political sociology of Israel.

Professor Marvin Fox, Chairman, Department of Near Eastern and Judaic Studies

Professor Arnold Gurin: Social welfare planning and policy.

Professor Benjamin Halpern: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor Robert Perlman: Social welfare.

Professor Marshall Sklare: Sociology of the Jewish community.

Assistant Professor Joshua Rothenberg: Yiddish and East European Jewish studies

Lecturer Mildred Guberman: Field work. Jewish communal service.

See the Department of Near Eastern and Judaic Studies and the Heller School catalog for other faculty and course offerings.

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of 14 courses including a fieldwork/internship component. Students usually take eight courses including fieldwork in the first year and six courses including an internship during the second year. Students are expected to fulfill requirements in two core areas: Judaica (classical and contemporary) and methods/practice skills.

During the last week of intersession between the first and second terms of each year, students are expected to participate in a one-week supplemental program of mini-courses with visiting professionals.

Residence Requirement. All candidates are expected to spend two years in residence at Brandeis University.

Language Requirement. Fluency in Hebrew (or in special circumstances, Yiddish) is required. Students not meeting this requirement upon entrance must take appropriate courses, *not for credit*. The language requirement must be met by the end of the first year.

Summer Study in Israel. Directly following their first year of study, students are expected to participate in a five-week Israel seminar sponsored by the Lown Center in cooperation with the Center for Jewish Education in the Diaspora at The Hebrew University. Supplemental scholarship support is available for the seminar. The program is designed for students, most of whom have already participated in education programs in Israel.

Fieldwork/Internship. In both years of study, students have practical field experience in a Boston area Jewish educational or communal service organization. First year Jewish communal service students (CJS 248c) spend two days a week in the field, while Jewish education concentrators (CJS 204) make weekly visits to selected Jewish schools. In the second year, all students have a 20 hour a week internship assignment. This schedule requires that students plan to be in residence through the end of May and plan for a shorter intersession than the academic calendar indicates.

Substantive Paper. A major substantive paper is developed from some phase of field practice. This is done in conjunction with the student's second year internship assignment. For research concentrators, the requirement is for a Master's thesis based on a research project. The substantive paper/thesis requirement is met during the second year.

Courses of Instruction

CJS 114a. The Book of Amos

See NEJS 114a.

Mr. Sarna

CJS 117b. Dead Sea Scrolls

See NEJS 117b.

Mr. Fishbane

CJS 119b. The Minor Prophets

See NEJS 119b.

Mr. Sarna

CJS 123b. Classical Biblical Commentaries

See NEJS 123b.

Mr. Fox

CJS 125a. Midrashic Literature

See NEJS 125a.

Mr. Fox

CJS 131a and b. History of Jewish Philosophy

See NEJS 131a and b.

Mr. Ivry

CJS 140a and b. The Jews in Europe

See NEJS 140a and b.

Mr. Ravid

CJS 145b. History of the Modern Near East

See NEJS 145b.

Mr. Levy

CJS 149b. Politics and Society in Contemporary Israel

An examination of the inter-relationship between social and political institutions in modern Israel. Change and development in ideological and institutional patterns.

Mr. Fein

CJS 155b. Health and Longevity in the U. S.

See American Studies 155b.

Mr. Fuchs

CJS 160a. The American Jewish Experience 1654-1885

A survey of American Jewish history from the earliest settlement to the consolidation by the 19th century German Jewish immigrants of their social, economic and ideological patterns.

Mr. Jick

CJS 160b. The Emergence of the American Jewish Pattern—1880 to the Present

See NEJS 160b.

Mr. Noy

CJS 161aR. American Jewish Life and Institutions

See NEJS 161aR for description.

Mr. Sklare

CJS 163aR. The Sociology of the American Jew

See NEJS 163aR for description.

Mr. Sklare

***CJS 164b. The Sociology of the American Jewish Community**

CJS 166a. Modern Jewish Intellectual History to 1870

See NEJS 166a for description.

Mr. Halpern

CJS 168a. Jewish Life and Institutions in Eastern Europe

See NEJS 168a.

Mr. Rothenberg

CJS 170b. Jewish Life and Institutions in Eastern Europe

See NEJS 170b.

Mr. Rothenberg

CJS 175a. Religion and Ethnicity in American History

See American Studies 169a for description.

Mr. Fuchs

CJS 182a. Introduction to Jewish Bibliography

See NEJS 182a.

Mr. Cutter

***CJS 204a. Theory and Practice of Jewish Education**

***CJS 204b. The Curriculum of the Jewish School**

CJS 205a. Theory and Practice of Jewish Communal Service

An introduction to the field of Jewish communal service. This includes a history of Jewish communal services in this country, their relationship to Jewish traditions and to developments in the field of social welfare; the settings in which Jewish services are offered and the factors making for effective organizational performance.

Mr. Reisman

CJS 205b. Theory and Practice of Jewish Communal Service

The focus of the course is on developing a systematic approach to professional performance in Jewish communal organizations. This involves an examination of several theoretical approaches to helping individuals, groups, and communities. What are the generic principles of the helping process?

Mr. Reisman

CJS 206b. Principles of Informal Education and Small Groups in Jewish Communal Service

This course introduces students to basic principles of informal, experiential education as these are applicable in Jewish educational and communal organizations. This involves: small group dynamics; structuring learning environments; balance between affective and cognitive processes, and awareness of one's self in the role of group leader-educator.

Mr. Reisman

CJS 207a. Public Policy Within the Jewish Community

Jewish communities within America may be viewed as policy-making entities. The degree to which the policies they pursue are explicit rather than implicit, consistent rather than inconsistent, and well-informed rather than poorly informed, will vary. So, too, will the nature of power distribution within the community.

Mr. Fein

***CJS 208b. Instructional Theory and Practice**

CJS 210a. Seminar in American Jewish History

Evolving institutional patterns in the American Jewish experience.

Mr. Jick

***CJS 210b. Seminar in American Jewish History**

CJS 215a. Organization and Planning in the Jewish Community

This course will deal with the administration of organizations, inter-organizational planning, and the raising and allocation of funds in the American Jewish community. The purpose is to introduce second year students in the CJS-Hornstein Program to practical methods and tools in these areas and to ways of conceptualizing the processes of administration and planning.

Mr. Perlman

CJS 248c. Field Methods in Jewish Communal Service

Students are placed in selected Jewish communal organizations during the first year for two days a week of field practice. They receive individual supervision from an agency field supervisor, meet every other week with faculty for a group seminar and for periodic individual conferences.

Ms. Guberman

CJS 250. Field Methods in Jewish Communal Service and Jewish Education

Same as CJS 248, except students are in field work for three days a week.

Ms. Guberman and Mr. Reisman

CJS 254a. Structure of Jewish History

See NEJS 254a.

Mr. Halpern

CJS 254b. The Problem of Modern Anti-Semitism

See NEJS 245b.

Mr. Halpern

***CJS 262b. Problems in the Sociology of the American Jew: A Seminar**

Seminar in Contemporary Jewish Issues

During the Fall semester the seminar will meet every Wednesday from 11 a.m. to 1 p.m. During the Spring semester, the seminar will meet on alternate Wednesdays.

Seminar in Israel on Contemporary Jewish Issues

Offered in cooperation with the Center for Jewish Education in the Diaspora at Hebrew University, May 18 - June 22, 1977.

**CROSS-REGISTRATION AT BOSTON COLLEGE,
BOSTON UNIVERSITY AND TUFTS UNIVERSITY**

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. Brochures suggesting courses for cross-registration at each of the host institutions are available at the graduate school office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course and should expect to satisfy the prerequisites and requirements normally required for admission to that course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar and should present this permit to the Graduate School Registrar of the host institution.



ECONOMICS

Although the University does not offer graduate study in Economics, it does offer a significant group of upper-level courses which may be of interest to graduate students in other departments. These courses receive graduate credit on permission of the student's adviser.

Courses of Instruction

ECONOMICS 32b. Comparative Systems

A critical evaluation of major kinds of economic organization. Included are market economies, centrally planned capitalism, market socialism and centrally directed socialist economies.

Prerequisite: Economics 8b or equivalent.

Mr. Berliner

ECONOMICS 69b. An Economic Kaleidoscope

Begins with the present state of economics in the fields of money, welfare, price theory and capital theory and works backward through the intervening contributors to the modern greats—Wicksell, Pigou, Marshall and the Austrians and Fisher.

Prerequisite: Economics 8b and equivalent.

Mr. Weckstein

ECONOMICS 75a. The Economics of Underdeveloped Countries

An examination of the causes and characteristics of economic underdevelopment. Attention will be given to particular countries within the underdeveloped world.

Prerequisite: Economics 8b or equivalent.

Mr. Weckstein

ECONOMICS 122a. American Economic History

A study of the major institutions and factors which have influenced American economic growth. Selected topics and issues will be analyzed.

Prerequisite: Economics 8b.

Mr. Evans

ECONOMICS 130b. Mathematical Economics

This course provides an introduction to the mathematics used by economists with an emphasis on the economics of optimization. The subjects covered will vary slightly from year to year.

Prerequisite: Economics 82 or equivalent.

Mr. Friedman

ECONOMICS 135a. Industrial Organization

Economic analysis of American industry in terms of market structure, conduct and performance. Topics included are business organization, concentration, barriers to entry, price and product policies, profits, efficiency and progressiveness.

Prerequisite: Economics 80a or equivalent.

Mr. Baker

ECONOMICS 136bR. Introduction to Business

An application of the skills of the economists to problems of modern management in business, the public sector and non-profit private institutions.

Prerequisite: Economics 80a or equivalent.

Mr. Dolbear

ECONOMICS 150b. Social Economics

Seminar on the economic analysis of selected social institutions such as the family, politics, law, education, the arts, religion. Topics include economic and non-economic elements in the social welfare function, structural interdependence between economic and social institutions, production function and economic structure of social institutions.

Prerequisite: Economics 80a or equivalent.

Mr. Berliner

ECONOMICS 160bR. International Trade

International monetary arrangements, foreign exchanges and exchange control, the theory of international trade and price relationships, capital movements and labor migration, customs unions, the theory of international liquidity.

Prerequisite: Economics 80a and 82b or equivalent.

Mr. Petri

ECONOMICS 169aR. Through the Looking Glass

Seminar on economic issues, analysis and criticism presented by economists outside the mainstream of orthodox neo-Classical economic thought. Readings in Marx, Veblen, Leontief and current Radical Economists.

Prerequisite: Economics 80a or equivalent.

Mr. Baker

ECONOMICS 172b. Monetary Theory

A modern treatment of the theory of money in both a closed and an open economy. Contrasts monetary models with income-expenditure models and examines the empirical studies by which alternative policies are judged. Concludes with an analysis of internal stabilization policy and international financial policy.

Prerequisite: Economics 82 or equivalent.

Mr. Williams

ECONOMICS 173b. Inflation Seminar

The phenomenon of inflation in recent world experience, its alternate explanations, comparisons of various national policies to control it and especially examines private and public institutions to facilitate adjustment to it. Does inflation help to reach high employment levels or to increase the rate of growth? Are we on the brink of inflation?

Prerequisite: Economics 82 or equivalent.

Mr. Dolbear

ECONOMICS 179b. The Legal Regulation of Economic Activity

The course will examine the reasons for economic regulation in certain industries and effect of regulation on efficiency, distribution of income, and innovation. Case studies focus on who has benefited and who has lost from regulations.

Prerequisite: Economics 80a

To be announced.

ENGLISH AND AMERICAN LITERATURE

Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers for candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a Bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

Professor John H. Smith, *Chairman:* Renaissance literature.

Professor J. V. Cunningham: Renaissance literature. Poetry.

Professor Victor Harris: Seventeenth century literature.

Professor Milton Hindus: American literature. Contemporary literature.

Professor Benjamin B. Hoover: Eighteenth century literature.

Visiting Professor Richard Moore (Fall Term): Creative writing.

Professor Robert O. Preyer: Victorian literature.

Fannie Hurst Visiting Professor Louis Simpson

Professor Peter Swiggart: American literature.

Visiting Professor Arturo Vivante (Fall Term): Creative writing.

Associate Professor Allen R. Grossman: Contemporary literature. Seventeenth century literature.

Associate Professor Ray S. Jackendoff: Linguistics.

Associate Professor Karen W. Klein: Medieval literature.

Associate Professor Alan L. Levitan: Renaissance literature.

Associate Professor Richard J. Onorato: Nineteenth century literature.

Associate Professor S. Susan Staves: Restoration literature.

Visiting Assistant Professor Michael Vannoy Adams: American literature.

Assistant Professor Philip Fisher: Victorian literature. Modern literature.

Assistant Professor Michael T. Gilmore: American literature.

Assistant Professor Alan Lelchuk: Victorian literature. Creative writing.

Assistant Professor Joan M. Maling: Linguistics.

Assistant Professor Thomas J. Wolf: British romanticism.

Lecturer Ivan Gold: Creative writing.

Degree Requirements

Following are the degree requirements for the Department of English and American

Literature. Students should also consult the Academic Regulations and General Degree Requirements sections on pages 17 and 21.

Master of Arts

Program of Study. Each student will take English 200a. In addition, a normal program will consist of five courses, at least three of which will be 200-level seminars. All programs must be approved by the student's adviser and by the Director of Graduate Studies.

Residence Requirement. The minimum residence requirement is one year, though students with inadequate preparation may require more.

Language Requirements. A reading knowledge of a major foreign language (modern European, ancient Greek, or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

Qualifying Examination. An oral examination, by committees of faculty members, will be given at the beginning of the spring term on one of several major texts, the texts to be announced at the end of the fall term. This examination will test a student's ability to read and understand a major literary work or a group of short works by the same author. Admission to the Ph.D. program in addition to qualification for the M.A. degree will depend upon the results of this examination, in addition to course evaluation.

Doctor of Philosophy

Admission to the Ph.D. Program. (1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. program by the Department upon recommendation of the Committee on Graduate Studies.

(2) Students who enter with a Master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination requirement described above under the Master of Arts Program. Provided this requirement is fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission, up to a year's residence and course credit for work completed elsewhere may be granted.

Program of Study. After admission to the Ph.D. program, each student will plan a program of study with a faculty adviser of his or her choice; each such program must be approved by the Director of Graduate Studies. For the student not given credit for graduate work elsewhere, a normal program of study will include at least four graduate level courses in the student's second year. A student is expected to complete graduate work with a knowledge of the various historical periods and genres of English and American literature, and the program that is chosen should reflect this goal.

Pre-dissertation Examination. All candidates for the Ph.D. will be asked to pass an oral examination in the historical period or genre in which the candidate expects to write a dissertation. This examination is normally taken in the semester following satisfaction of the residence requirement, but it may be postponed upon approval by the Director of the Graduate Program. The examination may be taken as many times as necessary without prejudice to a student's standing in the Ph.D. program.

Residence Requirement. The minimum residence requirement is one year beyond the Master's degree or two years beyond the Bachelor's.

Other Requirements

1. Language requirement. A reading knowledge of one major foreign language (modern European, ancient Greek, or Latin). Satisfaction of the language requirement for the Master's degree at Brandeis completes the language requirement for the Ph.D. as well.

2. One of the following, as relevant to a student's research and career plans and as approved by his or her adviser and the Director of Graduate Studies: (a) a reading knowledge of a second major foreign language; (b) one graduate-level course in the literature of a foreign language or in a discipline other than English which is related to the student's dissertation plans.

Training in Teaching. Provided openings exist, students in their second and third year in the program can expect to be awarded at least one teaching assistantship each year, provided their academic work is of high calibre.

Admission to Candidacy. A student will be recommended by the Department for admission to candidacy for the Ph.D. degree after completing with distinction the program of study and satisfying all Departmental requirements prior to the writing and defense of a dissertation. A student admitted to candidacy must have submitted a formal dissertation proposal, subject to approval by the student's dissertation director and by an additional member of the Departmental faculty.

Dissertation and Defense. Each student will submit a dissertation in a form approved by his or her dissertation director and by a committee appointed by the Director of Graduate Studies. The student will defend the dissertation at a final oral examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project or a textual project.

History and Structure of English

The Department also offers an alternative program in the history and structure of the English language, with specialization in Old, Middle or Early Modern English. For details, address the chairman of the Department.

Courses of Instruction

ENGLISH 123aR. Renaissance Poetry

Readings in Wyatt, Surrey, Marlowe, Sidney, Spenser, Shakespeare, Donne, Jonson. In addition to lyrical poetry, select narrative poems will also be read.

Mr. Levitan

ENGLISH 128b. Music and Poetry

A study of the varying philosophical and aesthetic attitudes toward the relationship of words and music on the parts of poets and composers from the Middle Ages to the present, concentrating on the English Renaissance and contemporary works. Facility in reading vocal scores is essential; some background in music theory is advisable.

Mr. Levitan

***ENGLISH 132b. Chaucer**

ENGLISH 133aR. Advanced Shakespeare

An intensive analysis of a small number of Shakespeare's plays.

Prerequisite: English 33a or consent of instructor.

Mr. Smith

COLIT 133b. Aristocratic and Popular Drama: Japan and the West

Court drama and public drama in Japan and Europe from the fourteenth century on. The genres of noh, bunraku, and kabuki will be compared to the medieval cycle plays, court masques, and popular Renaissance theater in England and France. Modern re-workings of each nation's traditional dramatic themes will also be studied.

Mr. Levitan

ENGLISH 135b. Romantic Poetry

This course will cover the major poetry of Wordsworth, Keats, and Shelley, stressing the development of each poet and the emerging Romantic preoccupation with the figure of the poet. Some reading of Coleridge and Byron will be included. Students will be expected to familiarize themselves with the period and the biographies of the poets studied.

Mr. Wolf

ENGLISH 136a. Whitman and his Archive

The poetry of Whitman in the context of his epic predecessors (Lucretius and Virgil), his American contemporaries (principally Emerson and Dickinson) and his modern successor (Wallace Stevens).

Mr. Grossman

ENGLISH 138a. Studies in Literary Influence: Milton, Blake, Wordsworth, Keats

With Milton as the focus, we will read his poetry and then deal with the variety of Romantic reactions to it.

Mr. Wolf

ENGLISH 140b. The Long Narrative Poem

Readings will be chosen from such works as the following: Paradise Lost, The Prelude, Don Juan, In Memoriam, The Ring and the Book, The Song of Myself, The Cantos, Four Quartets, Paterson, Notes Towards a Supreme Fiction, Sphere (Ammons). The works chosen will be read in their entirety.

Mr. Wolf

***ENGLISH 142b. The Ballad**

***ENGLISH 143a. Elizabethan and Jacobean Drama**

***ENGLISH 145b. Victorian Poetry and Poetics**

***ENGLISH 146a. Poetry and Revolution, 1780-1839**

***ENGLISH 147b. American Drama**

ENGLISH 148b. Classical Background of English Literature: Myths

A broad overview of classical myths and their use in English literature. The classical works, to be read in English translation, will include Hesiod and Ovid; English works will be from several periods.

Mr. Smith

***ENGLISH 150b. Problems of Poetry**

ENGLISH 154b. Augustan Satire

Satire in prose, poetry, and drama during the Restoration and eighteenth century. Satiric techniques used to create political myth and for practical political propaganda. Major writers include Hobbes, Dryden, Defoe, Swift, Gay, Pope, and Fielding, but some anonymous radical satire will also be explored.

Ms. Staves

ENGLISH 157a. The Poetry of W. B. Yeats and Robert Frost

A reading of the collected poems of Yeats and Frost. Related texts, including biography, will also be assigned, and particular attention will be given to questions about the origin of creativity and the dynamics of response.

Mr. Lynch

***ENGLISH 157b. Twentieth Century British Drama**

***ENGLISH 164b. Restoration Drama**

ENGLISH 166aR. Herman Melville

A reading of six of Melville's novels and four of his short stories. The required reading includes *Typee*, *Moby Dick*, *Pierre*, *Israel Potter*, *The Confidence-Man*, *Billy Budd*, "Bartleby," "The Tartarus of Maids," "Cock-a-Doodle-Doo!" and "Benito Cereno," as well as *The Letters of Herman Melville*, Jay Leyda's *Melville Log*, and H. Bruce Franklin's *Wake of the Gods*. We may include films of four Melville stories.

Mr. Adams

ENGLISH 166b. American Transcendentalism: Emerson to Dickinson**ENGLISH 167b. Joyce****ENGLISH 174b. Eighteenth Century Novel**

The rise of the novel in England. Early theories of the novel and problems and practical criticism of fiction. This year the course will be especially concerned with the relative importance of romance and realism in the development of the novel and with the discovery of marriage as a novelistic subject. Writers to be studied include: Richardson, Fielding, Sterns, Radcliffe, Austen.

Ms. Staves

ENGLISH 175a. Dickens and Dostoevsky

The course will emphasize the modes of grotesque and philosophical comedy, the representation of the city, the romantic extension of realism, and the major literary forms of the novel of ideas and the novel of social reform.

Mr. Fisher

ENGLISH 175b. City and Psyche in Victorian Literature.**ENGLISH 176a. Hawthorne and Melville****ENGLISH 176bR. The Novels of Charles Dickens, George Eliot, and Thomas Hardy**

Nine or ten novels selected from the major work of each novelist including *The Pickwick Papers*, *Middlemarch*, and *Tess of the D'Urbervilles*.

Mr. Lynch

ENGLISH 177b. Contemporary Women Writers

This course will study the works of writers such as Doris Lessing, Christina Stead, Grace Poley, Tillie Olsen, Alice Walker, Adrienne Rich, Denise Levertov, Muriel Rukeyser, Louise Bogan, Lillian Hellman and May Sarton. Perhaps Anais Nin and Simone DeBeauvoir. Their works will be placed in their literary and social context and also in the tradition of women writers of the stature of Jane Austen, the Brontes, George Eliot and Virginia Woolf. Several critical perspectives, historical, structuralist, formalist, mythic, Marxist, and feminist, will be used in studying these works. Additionally, feminist criticism will be scrutinized and evaluated in terms of its possible contribution to literary theory.

Ms. Klein

ENGLISH 181b. The Fiction of the Self*ENGLISH 187a. Modern Novel**

The course will cover the emergence of the modern novel, including works by Conrad, Forster, Woolf, Lawrence, Ford, Mann, Proust, Joyce.

Mr. Onorato

ENGLISH 187b. The Modern Novel

This course will continue covering the emergence of the modern novel, including works by Joyce, Stein, Gide, Kafka, Hemingway, Faulkner, Camus, Beckett, and Nabokov.

Mr. Onorato

***ENGLISH 188b. Linguistics and Literature**

ENGLISH 191a. Introduction to Linguistics

This course is to awaken the student's awareness of how much a speaker of English knows about a language that he or she has not been explicitly taught, to show that this knowledge requires explanation, and to develop a theory of linguistic structure to account for it.

Mr. Jackendoff

ENGLISH 191aR. Introduction to Linguistics

Ms. Maling

ENGLISH 191b. Linguistic Structure

A continuation of English 191a. This course extends the syntactic framework developed in the introductory course through the study of such problems as the complement system and constraints of transformations, with emphasis on their relevance to universal grammar.

Mr. Jackendoff

ENGLISH 192a. History of the English Language

An examination of the structure of the English language at various stages in its development, and of the processes of linguistic change relating these stages. No knowledge of linguistics assumed.

Ms. Maling

ENGLISH 193a. Problems of Phonology

The structure of sound systems in human languages. Isolated problems taken from the languages of the world, covering the topics of articulatory phonetics, distinctive features, and the notion of explanation in linguistics.

Ms. Maling

ENGLISH 193b. Introduction to Comparative and Historical Linguistics

Principles and methods of language history and linguistic reconstruction, with attention to the historical development of the notion of Indo-European in the 19th and 20th centuries. Readings from Grimm, Verner, Saussure, Meillet, etc. Practical exercises in comparative and internal reconstruction.

Ms. Maling

***ENGLISH 195b. Linguistics and Logic**

ENGLISH 196a. Semantics

This course explores the semantic structure of language in terms of current linguistic theory. Topics to be covered include the nature of semantic representation, functional structure, presupposition, and reference.

Mr. Jackendoff

***ENGLISH 196b. Syntactic Investigations in an Unfamiliar Language**

***ENGLISH 198b. Linguistics and Music**

ENGLISH 199a and b. Directed Research in Linguistics

Staff

ENGLISH 101a. Directed Writing: Fiction

Limited enrollment. Permission of the instructor.

*Mr. Lelchuk***ENGLISH 101b. Directed Writing: Fiction**

Limited enrollment. Permission of the instructor.

*Mr. Edelstein***ENGLISH 102a and b. Directed Writing: Poetry**

Prerequisite: Permission of the instructor. Prospective students should submit manuscripts (no fewer than five and no more than ten poems).

Mr. Strand

Seminars**ENGLISH 200a. The English Seminar: Methods of Literary Study**

Required of all first-year graduate students.

*Mr. Harris***ENGLISH 201a. History and Theory of Criticism: From Plato to Dr. Johnson**

Theories of style and fiction.

*Mr. Cunningham***ENGLISH 201b. History and Theory of Criticism: The Development of Modern Critical Theories**

See Literary Studies 201b.

*Mr. Engelberg***ENGLISH 222b. Medieval Seminar: Kenning, Metaphor and Allegory**

An investigation of the explicit and concealed uses of figurative language in Old and Middle English poetry. This seminar will explore topics such as the relationships among decoration, and structure and statement; poetic language as craft, as transubstantiation, as mediation in a communal culture. Readings will include Old English riddles, elegies, Middle English lyrics, *The Pearl*, Chaucer's "Knight's Tale," and selections from Piers Plowman.

*Ms. Klein***ENGLISH 233a. Graduate Seminar: Shakespeare**

Topics to be determined by the professor and members of the seminar on the basis of past experience.

*Mr. Levitan***ENGLISH 245b. Jane Austen and George Eliot***Mr. Preyer***ENGLISH 247b. Graduate Seminar: Joyce**

This seminar will cover the works of Joyce, with readings in biography, letters, and criticism included.

*Mr. Onorato***ENGLISH 254b. Eighteenth Century Seminar: Samuel Johnson**

Johnson worked in many forms: biography, narrative fiction, verse of various kinds (including drama), literary criticism, the familiar essay, political writing. We shall study his achievement in the light of contemporary works in these forms.

*Mr. Hoover***ENGLISH 266a. Graduate Seminar: T.S. Eliot and Ezra Pound***Mr. Hindus***ENGLISH 295b. Studies in a Major Text**

Required of all first year students.

Mr. Hoover

ENGLISH 350-368a and b. Directed Research

Open to advanced graduate students with the consent of the instructor and the Director of Graduate Studies.

350a and b.	<i>Mr. Cunningham</i>	360a and b.	<i>Mr. Levitan</i>
351a and b.	<i>Mr. Harris</i>	361a and b.	<i>Mr. Onorato</i>
352a and b.	<i>Mr. Hindus</i>	362a and b.	<i>Ms. Staves</i>
353a and b.	<i>Mr. Hoover</i>	363a and b.	<i>Mr. Adams</i>
354a and b.	<i>Mr. Preyer</i>	364a and b.	<i>Mr. Fisher</i>
355a and b.	<i>Mr. Smith</i>	365a and b.	<i>Mr. Gilmore</i>
356a and b.	<i>Mr. Swiggart</i>	366a and b.	<i>Mr. Lelchuk</i>
357a and b.	<i>Mr. Grossman</i>	367a and b.	<i>Ms. Maling</i>
358a and b.	<i>Mr. Jackendoff</i>	368a and b.	<i>Mr. Wolf</i>
359a and b.	<i>Ms. Klein</i>		

ENGLISH 400-418. Dissertation Research

400.	<i>Mr. Cunningham</i>	410.	<i>Mr. Levitan</i>
401.	<i>Mr. Harris</i>	411.	<i>Mr. Onorato</i>
402.	<i>Mr. Hindus</i>	412.	<i>Ms. Staves</i>
403.	<i>Mr. Hoover</i>	413.	<i>Mr. Adams</i>
404.	<i>Mr. Preyer</i>	414.	<i>Mr. Fisher</i>
405.	<i>Mr. Smith</i>	415.	<i>Mr. Gilmore</i>
406.	<i>Mr. Swiggart</i>	416.	<i>Mr. Lelchuk</i>
407.	<i>Mr. Grossman</i>	417.	<i>Ms. Maling</i>
408.	<i>Mr. Jackendoff</i>	418.	<i>Mr. Wolf</i>
409.	<i>Ms. Klein</i>		

FRENCH

See Joint Program of Literary Studies (page 89).

GERMAN

See Joint Program of Literary Studies (page 89).

HISTORY

See Comparative History (page 66) and History of Ideas (page 112).

HISTORY OF AMERICAN CIVILIZATION

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed primarily to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European, Asian, Latin American or African history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. Training in one of the disciplines of the social sciences of humanities—politics, international relations, or literature, for example—to provide perspectives and methods that can illuminate historical problems;

2. A thematic field in American history, involving a distinctive subject matter and discipline: for example, American social history, American legal and constitutional history, American intellectual history, or American art and architecture.

3. A topic in comparative history, involving a distinctive subject matter and discipline: 20th century British and American literature, for example, or 19th century emigration/immigration, or 18th century American and European political and social philosophy.

A small, select student body will work in close cooperation with the faculty. From the beginning, individual programs of study will be developed to prepare students for their qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research and a critical approach to problems of historiography. Second year students, while pursuing further directed research, chiefly are encouraged to choose courses to complete their preparation in the examination fields. Studies in related fields will be arranged individually with appropriate members of the University's Graduate Faculty, either through standard courses or directed readings. For selected students with appropriate qualifications, there are opportunities for advanced study and research with distinguished scholars at neighboring universities in such fields as legal history and business history. Applicants should note with care the four parts of the examination, specified under *Degree Requirements*, in which all students are expected to demonstrate proficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some fundamental courses in American history and related fields in the social sciences or humanities. Students with the M.A. or a professional degree in history, law, or other related fields are invited to apply. Above all, the admissions committee must be satisfied that the applicant's interest in the History of American Civilization is serious and that his or her aspirations are professional. Students interested in Crown Fellowships or in the special arrangements for study in professional fields at neighboring universities, noted above, should submit applications by January 1, if possible.

Faculty

Executive Committee: Professor John P. Demos, *Chairman*; Professors Eugene C. Black, David H. Fischer, Morton Keller, Marvin Meyers; Associate Professor Gerald S. Bernstein.

Staff

Professor Eugene C. Black: Comparative Anglo-American history.

Professor John P. Demos: Family and community. Colonial America.

Professor David Hackett Fischer: Social and political structure. Early Republic.

Professor Morton Keller: Legal and political institutions. Modern America.

Professor Marvin Meyers: Ideas and politics. Jacksonian America.

Associate Professor Gerald S. Bernstein: American art and architecture.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full

year of residence at Brandeis University (eight half-courses), including two 200-level research courses, and (2) have passed the foreign language requirement.

Doctor of Philosophy

Program of Study. Doctoral candidates must complete two years in residence at Brandeis, and a minimum of sixteen half-courses. Programs of study and concentration will be formulated for each student, subject to the approval of the Executive Committee. Incoming students normally will be expected to take one full course of Directed Research in American History in their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for relevant graduate or professional work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program. The second 200-level Directed Research course may be waived by the committee on the basis of a Master's thesis or comparable research project at the graduate or professional level done elsewhere.

Language Requirement. A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed the foreign language examination by the end of the first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement.

Qualifying Examination. Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history; (2) a period of specialization in American history; (3) an area of comparative modern European, Asian, Latin American or African history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of specialization will normally be selected from the following: 1607-1763, 1763-1815, 1815-1877, 1877-1914, 1914-present. The special period may be redefined on request, for good academic reasons. Proposed comparative and related fields must be approved by the Executive Committee. Students entering the program without previous graduate training in American history are expected to take the Qualifying Examination no later than the end of their fifth semester of residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere, or who have one year of transfer credit for work taken elsewhere, are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Unless the student elects a single three-hour oral examination on all four fields, the Qualifying Examinations will be taken separately in each of the fields, with the general American field coming at the end. For each of the fields (2), (3), and (4), as above, the student will choose one appropriate professor with the approval of the chairman of the program. That professor, in consultation with the student, will define the requirements, course of preparation, and mode of examination (written and/or oral) for the field.

For the general American field, the Chairman will appoint two members of the Executive Committee as examiners. The student may choose a one-hour oral examination or a three-hour written examination followed, if the examiners so require, by an oral examination. In either case, the two professors in consultation with the student will define in advance the major themes or problems on which the examination will be based. So far as possible, fields (3) and (4), as above, should be selected with a view to broadening and deepening the student's understanding of his or her American history fields, and providing valuable background for the dissertation work.

With the consent of the Chairman and the professor concerned, qualified students in appropriate cases may be examined in fields (3) or (4), as above, by a faculty member at

another university. Moreover, with the consent of the Executive Committee, examinations in fields (3) or (4), as above, may be waived for students with the M.A., J.D., or other advanced degrees that represent a level or kind of training and achievement fully equivalent to those required in the Brandeis examinations for those fields.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, the qualifying examinations, and when the prospectus for a dissertation is approved by the Executive Committee.

Dissertation and Defense. When the dissertation is accepted by the Committee, a final oral examination will be scheduled at which the candidate must successfully defend his or her dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended the dissertation, he or she will give a public lecture.

Courses of Instruction

HISTORY 200. An Introduction to Themes and Problems of American Historiography

Required of all first-year students.

Mr. Fischer

HISTORY 201aA—207aA. Directed Research in American History

Students will normally elect one of the following in the fall term of the first and the second years. Each is designed to provide experience in designing, researching and writing a substantial essay of a monographic character, based on extensive use of sources. This is the equivalent of a full course and extends the due date for the final draft of the paper to March 1, to permit sufficient time for a major project. Specific research topics are selected by the student in consultation with the professor.

201aA. Topics in American Art and Architecture

Mr. Bernstein

202aA. Topics in British and European History

Mr. Black

203aA. Topics in American Colonial History

Mr. Demos

204aA. Topics in Social History, with emphasis on the Early Republic

Mr. Fischer

205aA. Topics in Modern America

Mr. Keller

207aA. Topics in Political and Social Thought, with emphasis on the period 1750-1850.

HISTORY 301-310. Readings in the History of American Civilization

The following are available in either semester.

301a or b. *Mr. Bernstein*

304a or b. *Mr. Fischer*

302a or b. *Mr. Black*

305a or b. *Mr. Keller*

303a or b. *Mr. Demos*

*307a or b. *Mr. Meyers*

HISTORY 401-409. Dissertation Research

401. *Mr. Bernstein*

404. *Mr. Fischer*

402. *Mr. Black*

405. *Mr. Keller*

403. *Mr. Demos*

407. *Mr. Meyers*

For courses available to History of American Civilization students in other historical areas, see the listings by departments and programs in the Graduate School and College catalogs, especially under Comparative History and History of Ideas.

In addition, the following courses may be taken as equivalent to History of American Civilization seminars:

HISTORY 150a. Colonial America: People, Culture and Society *Mr. Demos*

***HISTORY 150b.** The American Revolution

***HISTORY 151aR.** The Founding of the American Republic

***HISTORY 152b.** Problems of Democracy in Jacksonian America

***HISTORY 153a.** Civil War and Reconstruction

HISTORY 154b. The History of Modern America *Mr. Keller*

HISTORY 155a. Economic History of the U.S.
See Economics 122a. *Mr. Evans*

HISTORY 156. American Society: An Analytical History *Mr. Fischer*

HISTORY 157a. The American City: Boston as a Case Study *Mr. Green*

HISTORY 158a. Working Class History in the United States *Mr. Green*

HISTORY 158b. Race Relations in the United States *Mr. Green*

***HISTORY 160a.** Adams and America

***HISTORY 161a.** The American Political Tradition: Origins of the Civil War

***HISTORY 161bR.** The American Polity

HISTORY 162aR. The History of American Radicalism *Mr. Green*

HISTORY 163a and b. American Foreign Policy
See Politics 168a. *Mr. George*

***HISTORY 164a.** American Constitutional History, 1865-1937

HISTORY 164b. American Constitutional Law and Theory
See Politics 115b/215b. *Mr. Woll*

***HISTORY 165bR.** Civil Liberties in America

***HISTORY 167b.** Topics in American Legal History

HISTORY 168a. Between the Past and Present: American Culture 1890-1917
See American Studies 104a. *Mr. Whitfield*

HISTORY 168b. American Political and Social Thought Since World War II
See American Studies 185b. *Mr. Whitfield*

***HISTORY 190a.** Historiography

*HISTORY 191b. America

HISTORY 193b. The United States and Great Britain: Comparative Perspectives,
1830-1930

Messrs. Black and Keller

JOINT PROGRAM OF LITERARY STUDIES

Classics, Comparative Literature, French, German, Russian and Spanish.

Objectives

The joint program of literary studies normally accepts only students who declare themselves for the Ph.D. degree in the areas listed above. Interdisciplinary in design, the program aims to train literary scholars and teachers whose professional capabilities will be broader than their individual specialties. Students will have the opportunity to study the theory of literature, history and theory of literary criticism, and scholarly methodology in addition to the specific literatures in which the degree will be earned. A small and carefully selected student body will work closely with the faculty of the program and with one another in a core curriculum before specializing. Students are encouraged to plan an individual program of studies within their interests in consultation with their adviser(s). Although the program encourages individual initiative, with the advice and consent of adviser(s), it should be stressed that all students, whatever their areas, must master the basic literature, primary and secondary, in their field. The General Examinations will assume both breadth and depth of such knowledge. (Reading lists for each area are available.)

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program. Applications must be received no later than March 1. Please be sure to mark clearly the *area* of your choice on the application form. Each applicant must submit at least *one* college-level essay on a literary subject (which may be written in English) as a sample of work.

Faculty

Committee:

Professor Murray Sachs, *Chairman* (French)

Professor Denah Lida (Spanish)

Professor Edward Engelberg (Comparative Literature)

Professor Douglas Stewart (Classics)

Associate Professor Robert Szulkin (Russian)

Professor Harry Zohn (German)

In addition, all faculty members of the Departments of Classics, Germanic and Slavic Languages, and Romance and Comparative Literature participate in this program.

Degree Requirements

Master of Arts

Only doctoral candidates will be accepted into the program. However, students who have completed two years of full-time study in residence may be awarded the M.A. degree. Such students must be in good standing (no incompletes). In addition, such students must have passed the language requirement, either by certification and/or examination, as follows: single area candidates: *one* foreign language *other* than the major lan-

guage; comparative literature candidates: *two* foreign languages *other than* the major language. Finally, such students must have passed satisfactorily the Qualifying Examinations. (Students who receive this M.A. will be expected to demonstrate to the satisfaction of the Committee substantial competence in *one* of the areas of the program: e.g., Spanish, Russian, French.)

Doctor of Philosophy

Program of Study. Individual programs of study will be arranged between students and their advisers. The core curriculum consists of several elements: all students in the Program are obligated to enroll in Literary Studies 201a and 201b. (The History and Theory of Criticism from Aristotle to the Moderns) and in Literary Studies 200a (Methods of Research). All students in the Program will be held responsible for certain works on literary theory, literary history, aesthetics (not studied in the criticism seminars) at the time of General Examination.

Although the Program is designed to permit students to develop their studies coincident with their interests and talents, and in consultation with their adviser(s), full-time students are expected to enroll in at least *three* literary studies seminars each year during the first two years of residence. In the first year students are obliged to enroll in the year seminar, History and Theory of Criticism, and Methods of Research (one semester); hence first year students are expected to augment this schedule with *at least* one or two additional seminars from the literary studies offerings.

Residence Requirements. The minimum residence requirement is two years of full-time study beyond the bachelor's degree.

Language Requirements. Students will be asked to demonstrate a reading competence in *at least* two foreign languages to be determined in consultation with their advisers. In certain areas of specialization, additional languages (e.g., Latin) may become necessary research tools, (comparative literature students should consult the special statement on language requirements below). Students must be certified in at least one language by the end of the first year in residence.

Qualifying Examination. During the first week in May of the student's first year in residence, each candidate will take written and oral Qualifying Examinations to demonstrate the ability to study literature productively at an advanced level. In consultation with the student's faculty adviser(s), a specific period, genre, movement, or theme is selected on which the two-hour written examination is based. The oral examination is based on the prepared analysis of a text selected by the candidate. Each student receives a written evaluation from the three-member committee for the Qualifying Examination, based not only on the written and oral examination but also on the student's overall first-year performance in course work, tutorials, examinations, etc.

General Examination. Students may take the General Examinations whenever they and their advisers feel they can appropriately do so. However, normally students should plan to complete the General Examination no later than the end of the third year in residence. Examinations will be offered twice a year, October and May. They will be written and oral. Details about the General Examinations and procedures will be distributed on request.

Admission to Candidacy. Candidates will be recommended for admission to candidacy when the residence and language requirements have been met, the General Examinations have been successfully passed, and a prospectus of the candidate's proposed dissertation topic has been approved by a committee of the area concerned.

Dissertation and Defense. The completed dissertation must be read and found acceptable by its director and two other readers before the candidate is eligible for the Final Oral Examination. The Final Oral Examination will be conducted by a committee of not less than four, one of whom must come from outside the candidate's area.

Teaching. All students in the Program are expected to do some supervised teaching, either as a teaching assistant or by means of other arrangements. In some areas, where teaching assistantships may at times be unavailable, students will be expected to fulfill some teaching opportunities (occasional class lectures, for example) without remuneration.

For Candidates in Comparative Literature

1. Any student in the Program who declares candidacy in comparative literature should decide, as soon as possible, on a *major* and *minor* literature. The major literature may *not* be English or American. Exact “proportions” cannot be stated in advance and will be worked out in consultation between students and adviser(s).

2. Candidates in comparative literature are expected to take three language examinations as follows:

a. The major language, which should be near level of mastery (reading, writing and speaking) on acceptance to the Program. Students may simply be “certified” for this language if their level of competence is obvious.

b. The second foreign language should be mastered as a reading language with a fluency that will permit easy access to all primary and secondary literature in the specified area.

c. The third foreign language should be a reading tool for primary and especially secondary materials.

It is quite possible that for certain areas of specialization—Medieval, Renaissance, etc.—additional languages will become necessary (e.g., Latin, Catalan, Old French).

Courses of Instruction

LITERARY STUDIES 200a. Methods of Research *Mr. Yglesias*

LITERARY STUDIES 201a. History and Theory of Criticism: From Plato to Dr. Johnson

See English 201a for description. *Mr. Cunningham*

LITERARY STUDIES 201b. History and Theory of Criticism: The Development of Modern Critical Theories *Mr. Engelberg*

LITERARY STUDIES 202b. Fiction: Theory and Practice *Mr. Sachs*

***LITERARY STUDIES 203a. Romantic Phenomena**

LITERARY STUDIES 204b. Theory and Practice of Literary Translation *Mr. Zohn*

***LITERARY STUDIES 205a. Crosscurrents in the French and English Enlightenments**

***LITERARY STUDIES 206b. The Comic in Literature: Theory and Practice**

***LITERARY STUDIES 207a. Studies in the Renaissance**

***LITERARY STUDIES 208b. Odysseus: The Hero**

***LITERARY STUDIES 209a. Modern Phenomena**

LITERARY STUDIES 210b. Genesis and Development of a Myth: Don Juan

Ms. Lida

LITERARY STUDIES 211a. The Tragic in Literature

Mr. Engelberg

LITERARY STUDIES 212a. Techniques of Stylistic Analysis

Mr. Frey

LITERARY STUDIES 300—305. Readings in Area Studies: Tutorials

300a and b. Classics. Readings in Latin and Hellenic Texts

Mr. Stewart and Staff

301a and b. Comparative Literature. Readings in Comparative Texts

Mr. Engelberg and Staff

302a and b. French. Readings in French Texts

Mr. Sachs and Staff

303a and b. German. Readings in German Texts

Mr. Zohn and Staff

304a and b. Russian. Readings in Russian Texts

Mr. Szulkin and Staff

305a and b. Spanish. Readings in Spanish Texts

Ms. Lida and Staff

LITERARY STUDIES 350—355. Directed Research

Open to advanced graduate students with the consent of the instructor and the Chairman of the Literary Studies Program.

350a and b. Classics

Mr. Stewart and Staff

351a and b. Comparative Literature

Mr. Engelberg and Staff

352a and b. French

Mr. Sachs and Staff

353a and b. German

Mr. Zohn and Staff

354a and b. Russian

Mr. Szulkin and Staff

355a and b. Spanish

Ms. Lida and Staff

LITERARY STUDIES 400. Dissertation Research

Staff

Following is a list of selected courses in each of the areas which constitute the Joint Program of Literary Studies which may be of special interest to graduate students. For a full list of all courses available consult the undergraduate catalog under Departments of Classics, Germanic-Slavic Languages, and Romance and Comparative Literature.

Classics**GREEK 116a.** Greek Comedy: Aristophanes

Mr. Higgins

GREEK 118a. Euripides

Mr. Stewart

LATIN 116b. Roman Drama

Ms. Johnston

Comparative Literature**COMPARATIVE LITERATURE 116aR.** Image of Man in European Renaissance

Literature Mr. Lansing

COMPARATIVE LITERATURE 120a. Classicism and Rationalism

Ms. Harth

COMPARATIVE LITERATURE 130b. The Crisis of Conscience

Mr. Cloonan

COMPARATIVE LITERATURE 148bR.	The Lyric since Valery	<i>Mr. Yglesias</i>
French		
FRENCH 116b.	The French Renaissance	<i>Ms. Harth</i>
FRENCH 140bR.	Twentieth Century French Theatre	<i>Mr. Cloonan</i>
FRENCH 170b.	The Moralistic Tradition in French Literature	<i>Ms. Pollock</i>
*FRENCH 180b.	Modern French Critical Thought	
German		
GERMAN 110aR.	Introduction to the Life and Works of Goethe	<i>Mr. Zohn</i>
GERMAN 140a.	German Literature in the Nineteenth Century	<i>Mr. Zohn</i>
GERMAN 170a.	German Literature Since the "Year Zero" (1945)	<i>Mr. Frey</i>
Italian		
ITALIAN 110a.	Modern Italian Literature	<i>Mr. Lansing</i>
Russian		
*RUSSIAN 112b.	Theory of Language (Pro-Slavic)	
RUSSIAN 117a.	Pre-Nineteenth Century Russian Literature	<i>Mr. Szulkin</i>
RUSSIAN 161b.	The Structure of Modern Russian	<i>Mr. Hanson</i>
Spanish		
SPANISH 120a.	Cervantes	
	In depth study of <i>Don Quijote</i> in Spanish	<i>Ms. Lida</i>
SPANISH 160bR.	Readings in Latin American Literature	<i>Mr. Rosser</i>
SPANISH 180b.	Twentieth Century Spanish Literature	<i>Ms. Sayers</i>

MATHEMATICS

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from Greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The department has available a variety of fellowships and scholarships for well-qualified students. To be considered for such financial support the student should submit an application by February 1.

Faculty

Professor Maurice Auslander, *Chairman:* Noncommutative and Homological Algebra.

Professor Edgar H. Brown, Jr.: Algebraic Topology and Differential Topology.

Professor David A. Buchsbaum: Algebra and Homological Algebra.

Visiting Professor Morris W. Hirsch: Differential Topology and Global Analysis.

Professor Harold I. Levine: Differential Topology and Singularities of Differentiable Maps.

Professor Jerome P. Levine: Differential Topology. Knot Theory.

Professor David I. Lieberman: Algebraic Geometry. Several Complex Variables.

Professor Teruhisa Matsusaka: Algebraic Geometry.

Professor Alan L. Mayer: Algebraic Geometry.

Professor Paul H. Monsky: Algebraic Geometry.

Professor Richard S. Palais: Differential Topology and Global Analysis.

Associate Professor David Eisenbud, (*Graduate Adviser:*) Algebra and Ring Theory.

Assistant Professor Ralph Greenberg: Algebraic Number Theory.

Assistant Professor Hans P. Jakobsen: Lie Groups.

Visiting Assistant Professor Ignacio Guerrero: Complex Analysis.

Assistant Professor Kyoshi Igusa: Differential Topology.

Visiting Assistant Professor Paul O. Kirley: Algebraic Topology.

Assistant Professor Charles Rockland: Partial Differential Equations.

Assistant Professor Gerald W. Schwarz: Geometric Analysis.

Research Associate Idun Reiten: Commutative and Homological Algebra.

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance in the three first year courses in algebra, analysis and topology—or equivalent examinations (see Program of Study).
4. Proficiency in reading French, German, or Russian.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the three first year courses in algebra, analysis and topology—or equivalent examinations (see Program of Study).
4. Superior performance in the Qualifying Examination.
5. Proficiency in reading two of French, German or Russian.
6. Doctoral dissertation approved by the Department.
7. Final examination consisting of the defense of dissertation.

Program of Study. The normal first year of study consists of Mathematics 101a and b, 111a and b, and 121a and b. In exceptional circumstances and only with the permission of the graduate adviser, a student with superior preparation may omit one or more of these courses and elect higher level courses instead. In this case he or she must take an examination in the equivalent material during the first year. The second year's work will normally consist of three higher level courses in addition to preparation for the qualifying examinations described below. Upon completion of the qualifying examinations, the student will choose a dissertation adviser and begin work on a thesis. This should be accompanied by advanced courses and seminars.

Qualifying Examination. The Qualifying Examination consists of two parts: a major examination and a minor examination. Both are normally taken in the latter part of the second year but may occasionally be postponed until early in the third year. For the major examination the student will choose a limited area of mathematics, e.g., differential topology, or several complex variables, or ring theory—and a major examiner from among the faculty. Together they will plan a program of study and a subsequent examination in that material. The aim of this study is to prepare the student for research toward the Ph.D. The minor examination will be more limited in scope and less advanced in content. The procedures are similar to those for the major examination, but its subject matter should be significantly different.

Admission to Candidacy. To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have successfully completed the qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

Dissertation and Defense. The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

MATHEMATICS 101a and b. Algebra I

Groups, rings modules. Galois theory. Affine rings and rings of algebraic numbers.
Multi-linear algebra. The Wedderburn Theorem. *Mr. Buchsbaum, Fall Term*
Mr. Mansky, Spring Term

MATHEMATICS 111a and b Analysis I

THEMATICS IIIa and b: Analysis I
Measure theory, Hilbert and Banach spaces, Fourier analysis *Mr. Rockland*

MATHEMATICS 121a and b Topology I

THMATICS 121a and b: Topology I
Point set topology, fundamental group, covering spaces. Simplicial complexes, elementary homology and cohomology theory with applications, cup and cap products. Poincaré duality. *Mr. J. Levine, Fall Term*

***MATHEMATICS 125b. Foundations of Mathematics**

See Philosophy 121b.

***MATHEMATICS 150. Mathematical Aspects of Information Science**

MATHEMATICS 199a and b. Readings in Mathematics

Staff

***MATHEMATICS 201. Algebra II**

MATHEMATICS 202. Algebraic Geometry I

An introduction to the subject of algebraic geometry.

Mr. Lieberman

***MATHEMATICS 203. Algebraic Number Theory**

***MATHEMATICS 204b. Homological Algebra**

Mr. Buchsbaum

MATHEMATICS 211. Dynamical Systems

Investigation of the behavior of flows and diffeomorphisms on manifolds. Their use as models of time-dependent systems in physics, biology, economics, etc. Several such models will be analyzed.

Mr. Hirsch

***MATHEMATICS 212. Several Complex Variables and Applications**

MATHEMATICS 221a. Topology II

Elementary homotopy theory, fibrations, obstruction theory, and spectral sequences.

Mr. Igusa

MATHEMATICS 221b. Topology II

Cohomology operations, characteristic classes, classifying spaces, elementary cobordism.

Mr. Kirley

***MATHEMATICS 222. Geometry of Manifolds**

MATHEMATICS 250. Riemann Surfaces

Construction of Riemann surfaces. Basic topological and analytical properties. Existence theorems. Uniformization. Function theory on compact Riemann surfaces: Riemann-Roch theorem, Jacobi varieties, automorphisms. Further topics such as Kleinian groups, automorphic forms, Teichmiller theory.

Mr. Guerrero

MATHEMATICS 291 Algebra Seminar

Non-credit.

Staff

MATHEMATICS 292. Analysis Seminar

Non-credit.

Staff

MATHEMATICS 293. Topology Seminar

Non-credit.

Staff

MATHEMATICS 299a and b. Readings in Mathematics

Staff

MATHEMATICS 301a. Commutative Algebra

Mr. Eisenbud

MATHEMATICS 302. Algebraic Geometry II

1st term: Algebraic theory of Picard and Albanese varieties, theory of descent, analytic theory of Abelian varieties (Abelian functions and theta functions), modular and paramodular functions, applications to algebraic number theory.

2nd term: Polarizations, global deformations of polarized varieties and problems related to deformations.

Mr. Matusaka

*MATHEMATICS 321a and b. Topology III

MATHEMATICS 324b. Lie Groups

1st term will cover the Lie algebra of a Lie group. Structure and representations of compact Lie groups.

2nd term will cover topics in representations of real semi-simple Lie groups.

Mr. Mayer

MATHEMATICS 335. Representation Theory of Finite Groups

This course will approach the representation theory of finite groups from the point of view of the theory of characters. Topics discussed will include induced representations, Brauer's theorem with applications, and modular representations.

Mr. Greenberg

MATHEMATICS 399a and b. Readings in Mathematics

Staff

MATHEMATICS 401—411. Research

Independent research for the Ph.D. degree.

401. <i>Mr. Auslander</i>	407. <i>Mr. Monsky</i>
402. <i>Mr. Brown</i>	408. <i>Mr. Palais</i>
403. <i>Mr. Buchsbaum</i>	409. <i>Mr. Lieberman</i>
404. <i>Mr. H. Levine</i>	410. <i>Mr. Eisenbud</i>
405. <i>Mr. J. Levine</i>	411. <i>Mr. Mayer</i>
406. <i>Mr. Matusaka</i>	



MEDITERRANEAN STUDIES

Information concerning the program in Mediterranean Studies may be obtained by addressing an inquiry to the Dean of the Graduate School.

Faculty

Professor Louis V. Žabkar, *Chairman*: Egyptian language and archaeology.

Assistant Professor Ian A. Todd: Mediterranean archaeology.

Instructor Martha A. Morrison: Cuneiform studies. Mesopotamian history. Ugaritic language.

Courses of Instruction

MEDITERRANEAN STUDIES 109b. Archaeological Methods

See Anthropology 109b.

Ms. Zeitlin

MEDITERRANEAN STUDIES 112. The Archaeology of the Aegean and the Near East

An introductory survey of the archaeology of the Aegean, Anatolia, Syria-Palestine, Mesopotamia and Egypt from the earliest periods to the end of the Late Bronze Age.

Mr. Todd

MEDITERRANEAN STUDIES 115. The Archaeology of Anatolia

A survey of archaeological sites and material from the earliest Neolithic through the Iron Age.

Mr. Todd

MEDITERRANEAN STUDIES 126. Intermediate Arabic

See NEJS 102 for description.

Mr. Levy

MEDITERRANEAN STUDIES 130. Elementary Akkadian

Intensive study of Akkadian based on the grammars of Ugnad and von Soden. Readings in the Code of Hammurabi and related material.

Ms. Morrison

MEDITERRANEAN STUDIES 138. Elementary Ugaritic

See NEJS 106.

Mr. Young

MEDITERRANEAN STUDIES 140. Elementary Egyptian

A study of Middle Egyptian based on Gardiner's grammar. The principal texts to be read are those included in Blackman's *Middle Egyptian Stories* and de Buck's *Readingbook*. In the second semester some Middle Egyptian hieratic is read.

Mr. Žabkar

MEDITERRANEAN STUDIES 146a. Environment and Archaeology

See Anthropology 146a.

Mr. D. Davis

*MEDITERRANEAN STUDIES 177b. Archaeological Method and Theory: Seminar

MEDITERRANEAN STUDIES 236. Advanced Akkadian

The Second Millennium B.C. in Mesopotamia will be examined through readings of the major sources, including Mari, Old Babylonian letters, Nuzi, El Amarna, Alalakh, and Kassite documents.

Prerequisite: Mediterranean Studies 130 or equivalent.

Ms. Morrison

MEDITERRANEAN STUDIES 243a. Advanced Egyptian

Selected texts of the New Kingdom.

Prerequisite: Mediterranean Studies 140.

Mr. Žabkar

MEDITERRANEAN STUDIES 243b. Advanced Egyptian

History and selected texts of Ptolemaic period.

Prerequisite: Mediterranean Studies 140.

Mr. Žabkar

MEDITERRANEAN STUDIES 401—404. Dissertation Research

Independent research for the Ph.D. degree.

401. Mr. Žabkar

404. Ms. Morrison

403. Mr. Todd

MUSIC

Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

Two general fields of study are offered in music:

1. *Musical Composition and Theory.* This program, emphasizing composition and studies in theory and analysis, leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

2. *History of Music.* This program, emphasizing studies in musical history and analysis (the balance between the two is flexible and is determined individually by each student in consultation with the faculty), leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in both.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in musical composition and theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in the history of music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. History applicants wishing to specialize in analysis should also submit examples of advanced work in musical theory. This work should be submitted together with the formal application for admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application. A departmental written test in basic musicianship and analysis will be sent to all applicants; answers are to be submitted by mail on or before February 15.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department on or before the final date

specified in the Academic Calendar for filing "Application for Financial Aid." Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Professor Robert L. Koff, *Chairman and Director of Performing Activities*

Professor Paul H. Brainard, *Co-Chairman and Director of Graduate Studies*

Professor Margaret H. Bent

Professor Arthur V. Berger

Professor Harold S. Shapero

Professor Seymour J. Shifrin

Associate Professor Martin Boykan

Associate Professor Caldwell Titcomb

Assistant Professor Edward Cohen

Assistant Professor Allan R. Keiler

Assistant Professor James D. Oleson

Assistant Professor Joshua Rifkin

Instructor David M. Hoose

Instructor Edward C. Nowacki

Performing Artist-in-Residence Timothy C. Aarset

Performing Artist-in-Residence John Gibbons

Performing Artist-in-Residence Maynard Goldman

Performing Artist-in-Residence Fred Goldstein

Performing Artist-in-Residence Ruth S. Rubinow

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the music faculty).

Candidates for the Master's degree in Musical Composition and Theory must possess a reading knowledge of one language from Group A.

Candidates for the Master's degree in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements. Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program of course work is completed in two academic years. It is suggested that students pursue no more than three full courses in any one year.

Examinations. Shortly after their arrival, new graduate students will be expected to take an examination in the standard literature of music from the early eighteenth century to the present. In cases of failure, examinations may be repeated.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must pass with distinction written general examinations in theory and history, one of which will be their major field, the other their minor field.

Thesis. Candidates for the degree of Master of Fine Arts in music are required to submit a thesis. For candidates in musical composition and theory, this will consist of a musical composition, its scope to be approved by the music faculty. For candidates in the history of music it will be an analytical or historical study on a topic acceptable to the music faculty. Candidates in the history of music may submit, in lieu of a separate thesis, revised copies of two seminar papers that have been certified by the seminar instructor and at least one other faculty member as demonstrating a high degree of competence in research and writing. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or March 1 for a May degree.

Doctor of Philosophy

Residence Requirements. A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program of course work will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates.

Language Requirements. Candidates for the Doctor's degree in the history of music must possess a reading knowledge of all three languages in Group A. If appropriate to the student's program, the music faculty may accept a language in Group B in lieu of Italian. Candidates in composition and theory must possess a reading knowledge of two languages in Group A.

Examinations. Candidates will be expected to pass with unusual distinction the written general examination for the M.F.A. After meeting their language and residence requirements they must pass the special oral qualifying examination.

Admission to Candidacy. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

Dissertation. Candidates for the degree of Doctor of Philosophy in Musical Composition and Theory must submit an original musical composition and a thesis on a theoretical or analytical subject. Candidates for the degree of Doctor of Philosophy in History of Music must submit a dissertation on an historical or analytical subject. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and March 1 for a May degree of the academic year in which the Ph.D. degree is to be conferred.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his or her critical ability, and effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

MUSIC 165b. Orchestration

The instruments of the orchestra; their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score. Written exercises, analysis of scores, study of recorded performances, and live demonstrations.

Mr. Titcomb

*MUSIC 171a. History of Music and Drama Criticism

MUSIC 180bR. Ethnomusicology

An introduction to the music of nonliterate peoples; to folk music, including that of the American Negro; and to the music of non-Western high cultures, with particular emphasis on India and Japan.

Prerequisite: Music 61 (or the equivalent) or a course in anthropology. *Mr. Titcomb*

*MUSIC 189b. Linguistics and Music Theory

MUSIC 197a. Tutorial in Music History and Literature

Analytical problems in tonal music.

Mr. Shifrin

MUSIC 197b. Tutorial in Musical Analysis

Basic analytical problems of the music of the twentieth century, approached through detailed study of a few representative works.

Mr. Cohen

MUSIC COLLOQUIUM

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.*

Staff and Visiting Lecturers

MUSIC 200. Proseminar in Musicology

A survey of the principal subject matters, problems, and techniques comprising the discipline of musicology. *Ms. Bent (Fall Term), Mr. Brainard (Spring Term)*

MUSIC 203a and b. Advanced Musical Analysis

Special analytic problems of structural interpretation with emphasis on tonal form and intrinsic relations. Intensive and detailed analysis of scores in terms of such considerations as the premises of the tonal system, Schenker's concept of musical unity, serial organization. Questions of methodology and terminology raised by the "new theory."

Mr. Berger

*MUSIC 221a. Seminar in the Music of the Middle Ages.

MUSIC 222. Seminar in the Music of the Renaissance

Studies in the history of music during the fifteenth and sixteenth centuries.

Mr. Rifkin

*MUSIC 223. Seminar in Baroque Music

MUSIC 224. Seminar in Pre-Classical and Classical Music

Study of historical problems in the music of the middle and late eighteenth century.
Messrs. Brainard (Fall Term) and Rifkin (Spring Term)

MUSIC 225. Seminar in Romantic Music*MUSIC 226a. Topics in the History and Literature of Western Music Theory**

Mr. Keiler

MUSIC 227. Proseminar in Theory and Composition

Technical projects in theory and composition; tonal forms and contrapuntal techniques.
Messrs. Cohen (Fall Term) and Shifrin (Spring Term)

MUSIC 228. Seminar in Twentieth Century Techniques

Exercises in composition employing musical materials and organizational methods developed since about 1900, accompanied by analysis of works of composers from Debussy to the present.
Mr. Shapero

MUSIC 233b. Topics in Analysis*MUSIC 244b. Berlioz**

Mr. Titcomb

MUSIC 246a. Stravinsky**MUSIC 265a. Advanced Orchestration****MUSIC 270. Seminar in Serial Music**

Detailed analysis of scores by Schoenberg, Webern, Boulez, Babbitt; methods of serial organization; relationship between serial procedures and general compositional problems such as phrase articulation and "harmonic movement."
Mr. Boykan

MUSIC 292. Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided.
Messrs. Berger and Shifrin

MUSIC 295a. Electronic Music

Composition, notation and recording of electronic music. Technical electronics as they apply to musical problems.
Mr. Shapero

MUSIC 299a and b. Individual Research and Advanced Work

Staff

MUSIC 400—409. Dissertation Research

Required of all doctoral candidates

400. <i>Mr. Berger</i>	405. <i>Mr. Titcomb</i>
401. <i>Mr. Boykan</i>	406. <i>Ms. Bent</i>
402. <i>Mr. Brainard</i>	407. <i>Mr. Keiler</i>
403. <i>Mr. Shapero</i>	408. <i>Mr. Cohen</i>
404. <i>Mr. Shifrin</i>	409. <i>Mr. Rifkin</i>

Electronic Music Studios

Two studios with facilities for the composition of electronic music are available to qualified student composers.
Director: Mr. Shapero



NEAR EASTERN AND JUDAIC STUDIES

Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of the classical and modern Judaic civilization, and to do further research in these areas. This work is done mainly through study of the relevant languages and literatures and interpretation of historical sources.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

Faculty

Professor Marvin Fox, Chairman: Jewish thought.

Professor Emeritus Alexander Altmann: History of Jewish philosophy and mysticism. Medieval philosophy, Classical Biblical commentary.

Professor Naftali C. Brandwein: Modern Hebrew literature.

Professor Emeritus Nahum Norbert Glatzer: Jewish history. Literature of the Second Commonwealth. Hebrew historiography. Eschatology.

Visiting Professor Moshe Goshen-Gottstein: Near Eastern languages and literature.

Professor Benjamin Halpern: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor Alfred L. Ivry: Jewish philosophy. Islamic philosophy.

Professor Nahum M. Sarna: Biblical studies. Dead Sea Scrolls.

Professor Marshall Sklare: Sociology of the Jewish community.

Professor Dwight W. Young: Ancient Near East civilization. Assyriology. Ugaritic. Biblical studies.

Associate Professor Michael Fishbane: Biblical studies. Dead Sea Scrolls.

Associate Professor Leon A. Jick: Contemporary Jewish history.

Visiting Associate Professor Avigdor Levy: Arabic language and history.

Associate Professor Benjamin C. I. Ravid: Jewish history.

Associate Professor Bernard Reisman: Jewish communal service.

Assistant Professor Ariella D. Goldberg: Hebrew.

Assistant Professor Joshua Rothenberg: Yiddish.

Lecturer Charles Cutter: Judaic bibliography.

Lecturer Isaac Neustadt-Noy: Hebrew.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Semitic Languages and Literatures (Akkadian, Arabic, Aramaic, Egyptian, Hebrew, Syriac).

History of Ancient Near East.

Islamic Studies.

Biblical Studies.

Jewish History.

Medieval Jewish Philosophy and Mysticism.

Jewish Thought.

The Modern Near East.

Contemporary Jewish Studies.

Fields of study not listed here may be approved.

Degree Requirements

Master of Arts

Residence Requirements. The student is required to complete four full courses in the department. Programs of study are kept flexible; the department will consider the needs and interests of each student and advise in outlining a program of study—this program may be modified later by the department. Students may be required to take courses given by the other departments. A student who can, on admission, give evidence of satisfactory competence in one Semitic language or in one particular field of Near Eastern and Judaic Studies, will be able to complete the program for his or her degree in one year. Additional resident study may be required of less advanced students.

Language Requirements. Every candidate for the Master of Arts degree must show proficiency in one Semitic language, and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive the degree.

Examination. An oral examination is given at the conclusion of the student's residence. The examination is designed to test the student's knowledge in various subjects of Judaica as well as an ability to relate information to the large area to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

Thesis. In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required four courses.

Doctor of Philosophy

Residence Requirement. The residence normally required of a Ph.D. student who is the holder of an M.A. degree is one year (four courses); a longer residence will be required for part-time students and students holding teaching assistantships. The main emphasis, however, is placed on the student's individual research.

Language Requirements. A candidate for the Doctor of Philosophy degree in this area must show proficiency in two Semitic languages and in two modern foreign languages, as required by the candidate's special field of research. The candidate must satisfy the language requirements no later than at the completion of the required residence in the Graduate School.

Examinations. A written or an oral comprehensive examination in three areas of study (the scope being determined at a conference with the examining board) is given at the conclusion of the student's residence. A student who fails to pass the examination, or any part of it, may apply for a re-examination, which will take place not earlier than one semester after the date of the first examination.

Admission to Candidacy. A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree upon fulfillment of the residence requirements, when the subject and synopsis of his or her dissertation have been accepted by the department, when he or she has passed the comprehensive examinations, and fulfilled the language requirements.

Dissertation and Defense. The student will discuss plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on the dissertation after the completion of residence, i.e., as a non-resident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

Courses of Instruction

NEJS 101. Beginning Classical Arabic

A first course in Classical Arabic covering the essentials of grammar, reading, pronunciation, translation and composition. *Mr. Levy*

NEJS 102. Intermediate Arabic

Study of advanced grammatical and syntactical forms. Reading of related classical and modern texts. Drills in pronunciation and composition.

Prerequisite: NEJS 101 or its equivalent.

Mr. Levy

NEJS 103a. Introduction to Islamic Civilization and Institutions

Islam as a religion and a way of life. This course will examine systematically the following topics: the message (Koran) and the messenger (Muhammad); the straight path (Sunnah) and the divergent path (Shia); Islamic law, theology, and mysticism; popular Islam; Islamic modernism. *Mr. Levy*

NEJS 106. Elementary Ugaritic

Grammar and poetic texts will be read with constant reference to biblical literature. Students may take this course for credit more than once since the tablets read in class will not repeat those studied in former years.

Prerequisite: Knowledge of Biblical Hebrew.

Mr. Young

*NEJS 108b. Comparative Grammar of Semitic Languages

NEJS 109a. The Patriarchal Narratives in the Light of Ancient Near East Thought

A reading of Genesis, Chapters 11-50, and a study of the historical and literary background that gave rise to traditions of Hebrew origins.

Prerequisite: Reading knowledge of Hebrew.

Mr. Young

***NEJS 110b. Problems in Biblical History**

NEJS 112a. Biblical Hebrew

A detailed investigation into the phonology, morphology, grammar and syntax of biblical Hebrew. Gesenius' grammar will be examined and supplemented.

Mr. Fishbane

***NEJS 112b. Duetero-Isaiah**

***NEJS 113. Targum**

NEJS 114a. The Book of Amos

A textual and exegetical study; the historical background and leading ideas.

Prerequisite: Hebrew 6 or equivalent.

Mr. Sarna

***NEJS 116b. The Problem of Evil in Jewish Philosophy**

NEJS 117b. Dead Sea Scrolls

Studies in the exegetical literatures of Qumran with particular attention to a detailed examination of the so-called Pesher literature. Emphasis will be placed on interpretative techniques and a consideration of the historical background of the texts where pertinent.

Mr. Fishbane

***NEJS 118. Book of Psalms**

NEJS 119b. The Minor Prophets: Nahum, Habakkuk, Zephaniah

A textual and exegetical study; the historical background and leading ideas.

Prerequisite: Hebrew 6 or equivalent.

Mr. Sarna

NEJS 123b. Classical Biblical Commentaries

An intensive study of the French and Spanish schools of Jewish commentators on a selected book of the Bible.

Prerequisite: Hebrew 6 or equivalent.

Mr. Fox

NEJS 125a. Midrashic Literature: *Mekhilta d'Rabbi Yishmael*

An analysis of the central ideas, the literary structure and the midrashic method of the *Mekhilta*. Emphasis will be placed on a close reading of the text with a view to developing in the students the capacity to do an independent analysis of midrashic literature. Attention will also be given to the general background and development of Midrash.

Prerequisite: Hebrew 6 or equivalent.

Mr. Fox

NEJS 131a. History of Jewish Philosophy: From Antiquity to the Twelfth Century

A survey and analysis of dominant themes in Jewish philosophy as reflected in the Bible, Rabbinic literature and such major thinkers as Philo, Saadia, Solomon ibn Gabirol, Rahya, Judah Halevi, and Maimonides.

Mr. Ivry

NEJS 131b. History of Jewish Philosophy: From the Twelfth to the Sixteenth Century

A survey and analysis of dominant themes in later medieval Jewish philosophy concentrating on such major thinkers as Gersonides, Crescas, Albo and their successors.

Mr. Ivry

NEJS 139a and b. Modern Hebrew Literature: The Jew and his Realia

An analytical study in the development of themes, motifs, milieu, ideas and structure in modern Hebrew prose and poetry, with emphasis on the Jew and his realia as reflected in this literature. The course will be based on the short stories of I. D. Berkovitz, G. Shoffman and B. Tamuz and others in prose; and on A. Shlonsky, N. Altermann, Y. Amichai and others in poetry.

Prerequisite: Hebrew 6 or the equivalent.

Mr. Brandwein

NEJS 140. The Jews in Europe to 1700

An examination of the phenomenon of Jewish survival in the European diaspora: the Jews in the Roman Empire; the origins of anti-Semitism, the Jewish religious heritage, the medieval Jewish community: the medieval church, society, economy and the Jews; the expulsion of the Jews from Western Europe.

Mr. Ravid

NEJS 140b. The Jews in Europe From 1492-1750

The Jews in the Renaissance; the Marranos; the reformation, counter-reformation and the Jews; rabbinics, mysticism and messianism; *raison d'état* and the readmission of the Jews to Western Europe; the background of the enlightenment and emancipation; introduction to Wissenschaft des Judentums.

Mr. Ravid

NEJS 145b. History of the Modern Near East

A study of the major developments leading to the rise of nationalism in the Ottoman Empire and its Moslem successor states.

Mr. Levy

NEJS 154a. History of the Hebrew Language: Introduction and Selected Documents

Major problems in contrasting different layers of classical Hebrew, its traditions and developments. Analyzing of sample texts down to medieval (and possibly modern) Hebrew.

Mr. Goshen-Gottstein

NEJS 155b. Hebrew and Semitic Studies in Post-Renaissance Europe

Tracing the problematics and growth of Hebrew and Cognate Studies, intertwined with the growth of Biblical Studies, from 1500 onward.

Mr. Goshen-Gottstein

NEJS 160a. The American Jewish Experience, 1654-1885

See CJS 160a for description.

Mr. Jick

NEJS 160b. The Emergence of the American Jewish Pattern, 1880 to the Present

The impact of mass immigration from Eastern Europe beginning in the 1880's. The emergence of the institutions, ideologies, life styles, and cultural norms which constitute the American Jewish pattern.

Mr. Noy

NEJS 161aR. American Jewish Life and Institutions

A survey of the contemporary community and the diverse forms of Jewish identification which characterize American Jewish life. Reform, Conservative, and Orthodox Judaism; problems of Jewish family life including intermarriage; problems of relationship to the general society and to other ethnic groups.

Mr. Sklare

NEJS 163aR. The Sociology of the American Jew

The individual, the in-group, and the majority society; minority group personality development; the Jewish family; patterns of self-segregation; acculturation and assimilation; religion in American society and in the life of the individual Jew.

Mr. Sklare

***NEJS 164b. The Sociology of the American Jewish Community**

NEJS 166a. Modern Jewish Intellectual History to 1870

Jewish ideologies and movements until the rise of political anti-Semitism.

Mr. Halpern

NEJS 168a. Jewish Life and Institutions in Eastern Europe, 1880-1918

An examination of the various facets of East European Jewish culture, values and way of life, as manifested in Jewish literature and folklore and in the social, political and religious movements and institutions of the period. Primary attention will be given to Jewish life in the Russian empire.

Mr. Rothenberg

***NEJS 168b. History of the Jews in the Soviet Union**

***NEJS 169a. The Destruction of European Jewry**

NEJS 170b. Jewish Life and Institutions in Eastern Europe, 1918-1939

An examination of the various facets of East European Jewish culture, values and way of life, as manifested in Jewish literature and folklore and in the social, political and religious movements and institutions of the period. Primary attention will be given to Poland which was the major center of Jewish culture and religious life in Eastern Europe during this period.

Mr. Rothenberg

NEJS 182a. Introduction to Jewish Bibliography

The aim of the course is to acquaint students in the various fields of Judaic studies with the general bibliographic tools and the bibliographies in the major sub-fields. The course will concentrate on general Judaica/Hebraica bibliographies, indexes, etc. and on subject bibliographies in such fields as Jewish history, Jewish philosophy, Hebrew language and literature, anti-semitism, holocaust studies, etc.

Mr. Cutter

NEJS 182aR. Introduction to Jewish Bibliography

See NEJS 182a.

Mr. Cutter

NEJS 187b. Biblical Images, Motifs and Ideas in Modern Hebrew Poetry

A study of the major biblical themes, images and ideas in modern Hebrew Poetry, concentrating on works from Bialik to A. Gilboa and H. Guri. Examples of such themes are: the prophet Amos in Bialik, King Saul in Tchernichovsky, Father Isaac in Gilboa and Guri, etc.

Mr. Brandwein

NEJS 210bR. Seminar in American Jewish History

Ideologies of acculturation and of Jewish continuity in America.

Mr. Jick

NEJS 224b. History of the Biblical Canon and Ancient Versions

Intended primarily for graduate students majoring in biblical studies.

Prerequisite: Ability to read rabbinic texts.

Mr. Sarna

NEJS 226a. Problems in Biblical Scholarship

A seminar intended primarily for graduate students majoring in biblical studies.

Mr. Sarna

NEJS 226b. Topics in Biblical Religion

An intensive investigation into selected themes and topics in the religion of ancient Israel seen against the background of ancient Near Eastern texts. The relationship of these issues to the Dead Sea Scrolls and other early Jewish sources will also be considered.

Mr. Fishbane

NEJS 230. Seminar in Medieval Jewish Philosophy

Topic for 1976-77: Maimonides *Guide of the Perplexed*, Part I and II. Students will be expected to master the text as well as the major medieval and modern commentators. Major emphasis will be placed on a study of the systematic structure of the *Guide* as well as on the analysis of the major philosophic ideas and arguments.

Mr. Fox

NEJS 233a. Seminar in Islamic Philosophy

Topic for 1976-77: Theories of soul and intellect in Islamic philosophy with special attention to Avicenna and Averroes. Students will be introduced to the original sources and to the reading of manuscript materials. A knowledge of Arabic is desirable, but students without Arabic will be admitted to the seminar, provided they have an appropriate general background.

Mr. Ivy

NEJS 233b. Quest and Existence in the Works of J. C. Brenner, N. Gnessin and S.

Y. Agnon

Analysis of structure and themes in the works of Brenner, Gnessin and Agnon. The quest theme, and double vision in the works of Agnon; the tragic vision, and the spiritual-national quest in the works of Brenner; Eros and Theos in the works of Gnessin; the self-portrait and stream of consciousness in the works of Brenner, Agnon and Gnessin.

Mr. Brandwein

NEJS 234b. Seminar in Late Medieval Jewish Philosophy

Topic for 1976-77: Theories of soul and intellect in such philosophers as Gersonides, Crescas and other major figures of the later medieval period. This seminar is a continuation of NEJS 233a, but students may be admitted who have not taken the first semester.

Mr. Ivy

NEJS 239a. Conflict of Ideas in Modern Hebrew Literature

A critical study of the major streams and trends in Modern Hebrew poetry and prose, by means of analysis of structure, themes, ideas and milieu; with emphasis on parallel motifs in European literature. The course will be based mainly on the works of Micha Yosef Levensohn, Y. L. Gordon, H. N. Bialik and S. Tchernichovsky in poetry; and S. Y. Agnon and H. Hazaz in prose.

Mr. Brandwein

NEJS 254a. The Structure of Jewish History

Introduction to methods of historical explanation. The comparative history of the Jewish-Gentile relationship: problems of social estrangement, political (legal) emplacement, cultural (religious) opposition from Greco-Roman to modern times.

Mr. Halpern

NEJS 254b. The Problem of Modern Anti-Semitism

A comparative analytical study of political and other forms of anti-Semitism in America, England, France and Germany since the Religious Wars.

Mr. Halpern

NEJS 272. The Jews in Venice to 1797

An examination of the Jewish community of Venice as a case study of a pre-eman-

cipation community. Emphasis will be placed on the legal status, economic activities, community structure, and religious and cultural life. Attention will be paid to the utilization of Jewish and non-Jewish sources, including state archives. Students will undertake, according to their background and interests, research in unpublished Hebrew or Italian documents, or in Rabbinic literature. *Mr. Ravid*

NEJS 320—336. Reading Courses

Special tutorials for advanced graduate students.

320a and b. Readings in Islamic Philosophy	<i>Mr. Ivry</i>
321a and b. Readings in Medieval Jewish Philosophy	<i>Messrs. Fox and Ivry</i>
322a and b. Readings in Modern Jewish Philosophy	<i>Mr. Fox</i>
323a and b. Readings in Jewish Thought	<i>Mr. Fox</i>
324a and b. Readings in Modern Hebrew Literature	<i>Mr. Brandwein</i>
325a and b. Readings in Biblical Texts	<i>Mr. Sarna</i>
327a and b. Readings in Ancient Near Eastern Civilization	<i>Mr. Young</i>
328a and b. Readings in Ancient Near Eastern Languages	<i>Mr. Young</i>
329a and b. Readings in Modern Near East and Modern Jewish History	<i>Mr. Halpern</i>
330a and b. Readings in the Sociology of the Jewish Community	<i>Mr. Sklare</i>
331a and b. Readings in Yiddish Literature	<i>Mr. Rothenberg</i>
332a and b. Readings in American Jewish History	<i>Mr. Jick</i>
333a and b. Sources in the History of the Jews in Europe to 1750	<i>Mr. Ravid</i>
334a and b. Monographs in the History of the Jews in Europe to 1750	<i>Mr. Ravid</i>
335a and b. Autobiography and Biography in Jewish History	<i>Mr. Ravid</i>
336a and b. Topics in Jewish History	<i>Mr. Ravid</i>

NEJS 401—408. Dissertation Colloquium

Independent research for the Ph.D. degree.

401. <i>Mr. Brandwein</i>	406. <i>Mr. Sklare</i>
402. <i>Mr. Fox</i>	407. <i>Mr. Young</i>
403. <i>Mr. Ivry</i>	408. <i>Mr. Jick</i>
404. <i>Mr. Halpern</i>	409. <i>Mr. Fishbane</i>
405. <i>Mr. Sarna</i>	410. <i>Mr. Ravid</i>



PHILOSOPHY AND HISTORY OF IDEAS

Faculty

Professor Peter Diamandopoulos: History of ancient philosophy. History of science.

Professor Henry D. Aiken: Ethics. American philosophy. Social philosophy.

Professor William A. Johnson: Philosophy of religion. History of religious thought. Ethics.

Professor George A. Kelly: Political philosophy. History of eighteenth and nineteenth century social and political thought.

Professor Frederic T. Sommers: Philosophy of language. Metaphysics. History of philosophy.

Professor John van Heijenoort: Logic. History of logic. Foundations of mathematics.

Professor Morris Weitz: Philosophy of art and literature. Analytical philosophy.

Associate Professor Robert S. Greenberg: Theory of knowledge.

Associate Professor Ray S. Jackendoff: Linguistics. Philosophy of language.

Assistant Professor A. Mark Smith: Philosophy and history of medieval science.

Lecturer Carol A. Donovan: Philosophy of mind. Philosophy of science. Contemporary philosophy.

Lecturer William C. Gay: History of philosophy. History of ideas.

Lecturer David B. Wong: Ethics. Social and political philosophy.

Lecturer David B. Zilberman: History of philosophy. Soviet philosophy.

PHILOSOPHY

Objectives

The graduate program in Philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

Admission

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate program in Philosophy should have had at least one year of history of philosophy and at least one course in logic. The department requires that applicants submit a sample of written work with their applications.

Degree Requirements

All programs will be worked out in consultation with the student's adviser.

Master of Arts

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full-time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination.
4. Demonstration of proficiency in either French or German.

Doctor of Philosophy

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination with distinction.
4. Demonstration of proficiency in either French or German; and in any additional language needed for advanced work in the student's area of specialization.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the department.
7. Successful defense of the dissertation.

Program of Study. Students will be assigned a tutor who will advise on the course of study and guide them in preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second year student may not take more than two semester reading courses in the 300 series; these must also be approved by the adviser and the department chairman.

Qualifying Examination. The qualifying examination is given each September, and the student is required to take it at the end of the first full year of residence. A single comprehensive test will be set, divided historically into three periods: (1) up to A.D. 1500, (2) 1500-1870, (3) since 1870. In addition, there will be an examination on logic, based on Philosophy 115a and 130aR. Candidates are, however, expected to use the examination as an occasion for dealing with the questions raised in an analytical manner, and for developing ideas of their own, rather than for repeating factual information about the history of philosophy. Credit will accordingly be given for analytical power and for original ideas, as much as for a grasp of the historical points at issue.

For each historical period, set books will be named early in the academic year preceding the examination. Candidates are required to show general familiarity with the development of philosophy in each of the three periods. Three texts will be named for each period, covering a range of topics in (e.g.) metaphysics, epistemology, ethics and social philosophy. Specialized texts will occasionally be named, without prejudice to candidates concentrating in other areas of philosophy. All examinations must be passed with distinction within 30 months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

Language Requirement. A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of the first year in residence and must meet the language requirement no later than the beginning of the fifth term in residence. Language examinations will be given early in the fall and spring terms. The department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

A student whose further work requires the use of an additional language must first demonstrate proficiency in that language.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he or she has completed the residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirements and when the

subject of the dissertation has been approved by the department.

Dissertation Topic Oral Examination. To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his or her proposed topic.

Dissertation and Defense. When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend the dissertation.

HISTORY OF IDEAS

Objectives

The program in the History of Ideas leads to the degree of Doctor of Philosophy in the History of Ideas. It is designed to give students a broad understanding of the historical development of ideas in several fields of thought, together with thorough training in the history of one of those fields. In practical terms, it prepares students, variously, for teaching and research in intellectual history and for historically-oriented teaching and research in philosophy and social science.

The program treats past thought systematically as well as historically, and is essentially interdisciplinary in character. The endeavor throughout is to examine the genesis of intellectual positions within a complex socio-historical matrix, the interrelation between theoretical and practical activities, and the role of ideas in human affairs.

A student trained in the program is expected to acquire a good general grasp of the theoretical and methodological problems involved in the comparative historical study of ideas, and of the general and intellectual history of a given period. The student is expected also to attain special competence in dealing, systematically as well as historically with any one field of thought (philosophical, scientific, social) within the period of chronological concentration, and with the classic texts of that field as a whole. Finally, students are expected to acquire a competent knowledge of some branch of an external subject related to their special interests (for example, in philosophy: epistemology, philosophy of science, or social and political philosophy; in history: a period of national history or a category of comparative history; in sociology: political sociology, sociology of literature, or social psychology).

Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who propose to specialize in the History of Philosophical Thought should normally present an undergraduate major in philosophy, together with evidence of adequate preparation in history or one of the social sciences; applicants who propose to specialize in the History of Scientific Thought should normally present either an undergraduate major in a natural science, together with evidence of adequate previous experience in history and philosophy or an undergraduate major in history or philosophy, together with evidence of adequate previous experience in a natural science; applicants who propose to specialize in the History of Social Thought should normally present an undergraduate major in history, philosophy, or one of the social sciences. The department requires that applicants submit a sample of written work with their application.

Degree Requirements

Master of Arts

In principal, only applicants for the Ph.D. program are accepted. There is no M.A. pro-

gram as such. However, the M.A. degree will be awarded upon completion of the following requirements:

1. One year of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in Latin, French or German.
4. Submission, by April 15, of an acceptable, substantial, scholarly paper written during the course of the year.

Doctor of Philosophy

The requirements for the Ph.D. degree are as follows:

1. Two years of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in two of the following languages: Latin, French, German; and in any additional language needed for advanced work in the student's area of specialization.
4. Submission, by April 15 of the student's first year of residence, of an acceptable, substantial, scholarly paper written during the course of the year.
5. Passing the Qualifying Examinations with distinction.
6. Admission to candidacy.
7. Submission of a doctoral dissertation approved by the department.
8. Successful defense of the dissertation.

Program of Study. Each student will plan his or her program of study in consultation with the adviser.

Language Requirements. A proficient reading knowledge of two of the following languages is required: Latin, Greek, French, German, Italian, Spanish. A student whose further work requires the use of an additional language must first demonstrate proficiency in that language. Students are expected to pass the examination in at least one of the two required languages in their first year of residence, the other in the second year.

Qualifying Examinations. The Qualifying Examinations are to be taken toward the end of the second or at the beginning of the third year of graduate study, and in no case later than the end of the third year. The form of the examinations—written, oral, “take-home,” etc.—is decided by the student in consultation with his or her adviser. The examinations will cover:

1. The History of a Field of Thought within that Period.
2. The General History of that Field, with emphasis on the classics thereof.
3. The Intellectual History of that Period.
4. An External Subject.

The requirements in the External Subject may be and are usually met by completing with distinction two courses in that subject.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon completion of the requirements as to residence, study, language proficiency, paper, qualifying examinations, and when the subject of the dissertation has been approved by the department. Such approval depends, in part, upon the student's passing with distinction, an oral examination in the general area of his or her proposed topic.

Dissertation and Final Oral Examination. Once a student has been admitted to candidacy for the Ph.D. degree, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of the adviser. It will be read by the committee, and by such external readers as the committee may wish to consult. When the dissertation has been accepted, the candidate will defend it in a final oral examination.

Courses of Instruction

PHILOSOPHY 103b. Seminar in Rationalism: Descartes *Mr. Wong*

PHILOSOPHY 105a. Plato
An introduction to Plato's thought through an intensive reading of several major dialogues. *Mr. Diamandopoulos*

PHILOSOPHY 105b. Aristotle
An introduction to Aristotle's thought through an intensive reading of some selected treatises. *Mr. Diamandopoulos*

PHILOSOPHY 107b. Medieval Philosophy
A survey of the developments of philosophy from the Patristic Age to High Scholasticism. *Mr. Johnson*

PHILOSOPHY 110b. Introduction to Marxism
The aim of this course will be to familiarize students with the major philosophical theories of Marx and some of his most influential 20th century followers. *Ms. Donovan*

PHILOSOPHY 115a. Intermediate Logic
Propositional calculus. Quantification theory. Satisfiability and validity.
To be announced

PHILOSOPHY 116b. History of Modern Ethical Theory
A study of major moral philosophers in the modern period with special attention to Hume, Kant, Bentham, Mill and Bradley. *Mr. Aiken*

PHILOSOPHY 117b. Ethical Theory in the Twentieth Century
Readings in the works of twentieth century authors. Attention will be given to questions concerning the meaning of ethical terms, the nature and function of moral judgments, moral reasoning and principles, and concepts of volition and action as they pertain to problems of ethics. *Mr. Wong*

PHILOSOPHY 118b. Modern Phenomenology
Some problems risen in modern phenomenological movement (Husserl and his followers). Readings from *Cartesian Meditations*, *Ideas*, and *Experience and Judgment*. *Mr. Zilberman*

PHILOSOPHY 119aR. Theory of Knowledge
The problem of knowledge will be discussed from a variety of standpoints: concepts and precepts, comparative logic, the psychology and neurophysiology of cognition, the historical development of conceptual traditions. *Mr. Weitz*

***PHILOSOPHY 121b. Foundations of Mathematics**

***PHILOSOPHY 124b. Concepts: Their History and Variety**

PHILOSOPHY 128bR. Oriental Philosophies
An examination of several Indian, Chinese and Japanese philosophies which analyze traditional problems of the nature of man, transcendence, moral commitment, the afterlife and human redemption. *Mr. Zilberman*

***PHILOSOPHY 130a. Philosophy of Logic**

PHILOSOPHY 131a. History of Jewish Philosophy: From Antiquity to the Twelfth Century

See NEJS 131a.

Mr. Ivry

PHILOSOPHY 131b. History of Jewish Philosophy: From the Twelfth Century to the Sixteenth Century

See NEJS 131b.

Mr. Ivry

PHILOSOPHY 132aR. Nineteenth Century Philosophy

A critical review and discussion of selected texts including Schelling, Schopenhauer, Marx, Bradley and Soloviev.

Mr. Zilberman

PHILOSOPHY 133b. Contemporary Analytic Philosophy

A critical survey of leading men and movements in recent British and American philosophy.

Ms. Donovan

***PHILOSOPHY 134a. The Continental Existentialists**

PHILOSOPHY 140b. Philosophy of Science

A critical discussion of major issues in the philosophy of science, including explanation, confirmation, scientific laws and theories and special problems of the social sciences.

Ms. Donovan

PHILOSOPHY 142aR. Philosophy of Law

The course will examine key concepts in the law, such as causality, responsibility, risk, negligence and punishment. Discussions will deal with the moral foundations, ethical implications and conceptual structure of legal systems.

Mr. Wong

PHILOSOPHY 143a. Continental Rationalism

Intensive study of the major works of Descartes, Spinoza and Leibnitz. *Mr. Weitz*

PHILOSOPHY 143bR. British Empiricism

Intensive study of selected works of Locke, Berkeley and Hume. *Ms. Donovan*

PHILOSOPHY 145bR. Hegel

Introduction to Hegel's philosophy with intensive readings from the *Phenomenology of Mind* and the *Science of Logic*. Special emphasis will be placed on Hegel's position in the history of philosophical thought.

Mr. Zilberman

PHILOSOPHY 147a. American Pragmatism

A study of major writings of the principal American pragmatists including C. S. Peira, William James and John Dewey.

Mr. Aiken

PHILOSOPHY 151a. Social and Political Philosophy

An analysis of the fundamental concepts of groups and individuals in social and political theory and a discussion of problems of relations of groups and individuals. Among problems and concepts to be discussed are responsibilities of individuals to groups, the nature of collectivity, the concept of community and the concept of an individual. Reference will also be made to the special historical communities, "experimental communities," such as the Paris commune, several American Utopian communities of the 19th century and the Israeli kibbutzim.

Mr. Wong

PHILOSOPHY 156b. Philosophy of Mind

An examination of selected current topics, including the concept of willing, intentionality, and the mind-body problem.
Mr. Aiken

PHILOSOPHY 157a. Philosophy of Language

Nature and uses of language, theories of meaning, and prediction. *Mr. Sommers*

PHILOSOPHY 158a. Metaphysics

An analytical investigation of certain problems in the area of metaphysics. Reference will be made to traditional as well as contemporary philosophers. Discussion will focus on the role of experience in the resolution of problems.

Mr. Greenberg

PHILOSOPHY 160b. Linguistic Philosophy

Examination of critical linguistic methods in analytic philosophy. *Mr. Sommers*

PHILOSOPHY 161b. Linguistics and Logic*PHILOSOPHY 167aR. Kant**

A contemporary analytic approach to certain problems in the *Critique of Pure Reason*.
Mr. Greenberg

PHILOSOPHY 196a. Semantics

See English 196a. *Mr. Jackendoff*

PHILOSOPHY 230. Seminar in Medieval Jewish Philosophy

See NEJS 230. *Mr. Fox*

PHILOSOPHY 233a. Seminar in Islamic Philosophy

See NEJS 233a. *Mr. Ivy*

PHILOSOPHY 234b. Seminar in Late Medieval Jewish Philosophy

See NEJS 234b. *Mr. Ivy*

PHILOSOPHY 300—306. Readings in Philosophy

300a and b. *Mr. Aiken* 304a and b. *Mr. Sommers*
302a and b. *Mr. Diamandopoulos* 306a and b. *Mr. Weitz*
303a and b. *Mr. Greenberg*

PHILOSOPHY 400—406. Dissertation Research

Independent research for the Ph.D. degree.

400. *Mr. Aiken* 404. *Mr. Sommers*
402. *Mr. Diamandopoulos* 406. *Mr. Weitz*
403. *Mr. Greenberg*

HISTORY OF IDEAS 100b. Introduction to the History of Ideas

Mr. Gay

HISTORY OF IDEAS 102a. Roman History

See Classics 102a for description. *Mr. Higgins*

HISTORY OF IDEAS 102b. Pagan and Christian Art and Thought in the Late Empire

See Classics 102b for description. *Messrs. Higgins and Gaehde*

HISTORY OF IDEAS 123b. Art and Culture in the Italian Renaissance

See History 123b.

Mr. Berkowitz

HISTORY OF IDEAS 124a. Humanism in Europe

See History 124a.

Mr. Berkowitz

***HISTORY OF IDEAS 125a. Major Figures of the Christian Tradition**

***HISTORY OF IDEAS 125b. Modern Religious Thought**

***HISTORY OF IDEAS 126bR. Religion and Its Conceptual Setting**

HISTORY OF IDEAS 136b. Topics in Historical Jurisprudence: The English System of Law

See History 124b for description.

Mr. Berkowitz

HISTORY OF IDEAS 137aR. Science in the Second Half of the Nineteenth Century.

See Physics 137aR.

Mr. Schweber

HISTORY OF IDEAS 144a. The Intellectual History of Europe, 1890-1930

A survey of dominant thinkers and currents of thought, with particular emphasis on the disintegration of the rationalist tradition in European culture. *Mr. Gay*

HISTORY OF IDEAS 144b. The Intellectual History of Contemporary Europe, 1930-1970

A survey of dominant thinkers and currents of thought, with particular emphasis on the response to irrationalism in contemporary European culture. *Mr. Gay*

HISTORY OF IDEAS 146a. Intellectual History of Modern Europe, 1637-1863

See History 132a.

Mr. Binion

HISTORY OF IDEAS 146B. Intellectual History of Modern Europe, 1857 to the Present.

See History 132b.

Mr. Binion

HISTORY OF IDEAS 163a. Communist Political Thought: Marx to Mao

See Politics 195a.

Mr. Hulliung

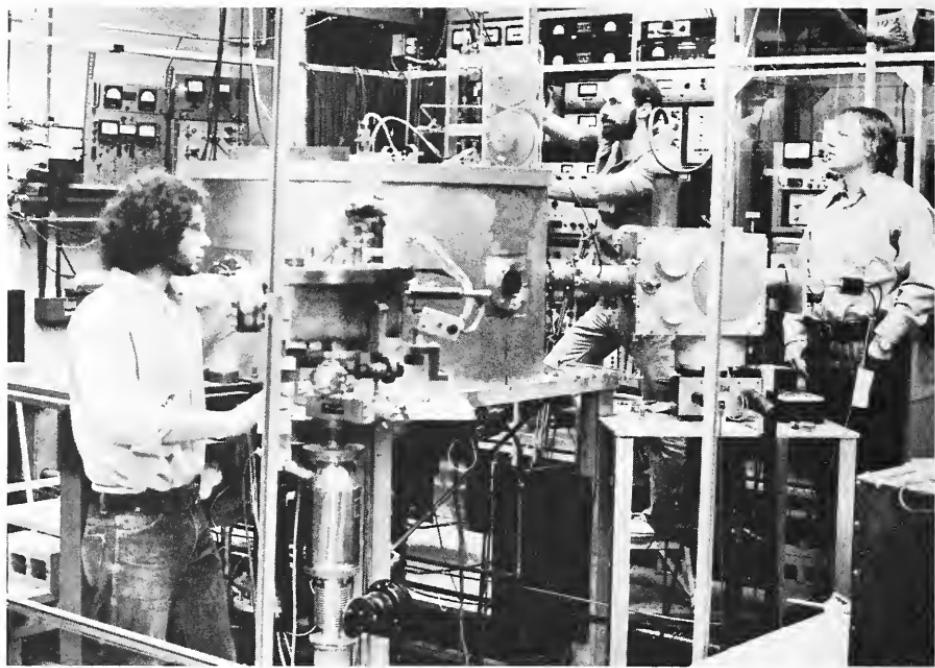
HISTORY OF IDEAS 182b. Political Thought from Machiavelli to Marx

See Politics 182b for description.

HISTORY OF IDEAS 400-409. Dissertation Research

Independent research for the Ph.D. degree.

400. <i>Mr. Aiken</i>	405. <i>Mr. Diamandopoulos</i>
402. <i>Mr. Berkowitz</i>	406. <i>Mr. Schweber</i>
403. <i>Mr. Binion</i>	408. <i>Mr. Johnson</i>
404. <i>Mr. Black</i>	409. <i>Mr. Kelly</i>



PHYSICS

Objectives

The graduate program in Physics is designed to equip students with a broad understanding of all major fields of physics and to train them to carry out independent, original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence of the student's knowledge, understanding and proficiency in classical and modern physics, and in mathematics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:

Theoretical Physics: Quantum theory of fields; quantum electrodynamics; elementary particle physics; general theory of relativity; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state; the manybody problem; kinetic theory of ionized gases; plasma physics; stellar constitution; stellar and galactic evolution; radiative transfer; cosmology and cosmogony.

Experimental Physics: High energy experimental physics; atomic and molecular beams; solid state physics; nuclear magnetic resonance; phase transition phenomena; low temperature physics; radio astronomy; light scattering; positron physics; biophysics.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor Stanley A. Deser, *Chairman:* Quantum theory of fields. Elementary particles. General relativity.

Professor Stephan Berko: Experimental nuclear and solid state physics. Positron interactions in solids.

Professor Donald L.D. Caspar (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Professor Jack S. Goldstein: Astrophysics. Radiative transfer. Stellar interiors.

Professor Marcus T. Grisaru: Field theory. Mathematical physics. Elementary particles.

Professor Eugene P. Gross: Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Professor Peter Heller: Solid state experimental physics. Phase transitions.

Professor Edgar Lipworth: Atomic physics.

Professor Alfred G. Redfield (Rosenstiel Basic Medical Sciences Research Center): Magnetic resonance. Biophysics.

Professor Howard J. Schnitzer: Elementary particle theory.

Professor Silvan S. Schweber: Quantum theory of fields. Quantum theory of multiparticle systems.

Associate Professor Max Chrétien: Computer science.

Associate Professor Jacques Cohen: Computer science. Programming languages. Non-numerical algorithms.

Associate Professor David J. DeRosier (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Associate Professor Lawrence E. Kirsch, (Director, Feldberg Computer Center): High energy experimental physics.

Associate Professor Robert V. Lange: Theoretical many body and solid state physics. Biophysics.

Associate Professor Hugh N. Pendleton III: Mathematical physics.

Assistant Professor James R. Bensinger: Experimental high energy physics.

Assistant Professor Karl F. Canter: Experimental low energy positron physics in atomic and many-body systems.

Assistant Professor William S. Gornall: Experimental solid state and molecular physics.

Assistant Professor Lawrence M. Schwartz: Theoretical solid state physics. Electronic structure of disordered systems.

Assistant Professor Robert F. Stein: Stellar evolution. Fluid dynamics. Solar corona. Magnetohydrodynamics.

Assistant Professor John F. C. Wardle: Experimental radio astronomy.

Assistant Professor Hermann F. Wellenstein: Experimental atomic physics. Electron impact spectroscopy.

Degree Requirements

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

1. One year's residence as a full-time student.
2. Six semester courses of advanced work in physics. A thesis on an approved topic may be accepted in place of a semester course.

3. Reading knowledge of Chinese, French, German, Italian, Japanese, Russian or Spanish; or proficiency in computer programming.
4. Satisfactory performance in the Qualifying Examination.

Doctor of Philosophy

1. Two year's residence as a full-time student.
2. Nine semester courses of advanced work in physics.
3. Reading knowledge of two of the languages listed under the Master of Arts requirements, including computer programming, with the restriction that at least one of them must be a "major" language (Chinese, French, German, Japanese or Russian).
4. Outstanding performance on the Qualifying Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
6. Doctoral thesis and final oral examination.

Program of Study and Course Requirements. Normally, first year graduate students will elect lecture courses from the 100 series; second year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

Students may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that an honor grade in these courses was obtained.

Residence Requirements. A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the Master's requirements.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Language Examination. The Language Examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The requirements for the Computer Programming examination are a reasonably complete knowledge of FORTRAN, skill in programming, and familiarity with the most important methods of numerical analysis.

Qualifying Examination. In the first year Quantum Mechanics (Physics 102) and Electromagnetic Theory (Physics 101) must be taken by all students unless they are exempted. All students, whether exempted or not, must take the final examinations in these courses (both fall and spring semesters), which also serve as the qualifying examination although the course itself is not required. An oral examination on general physics, given at the end of the first year, completes the qualification requirements.

Specialized courses also will form part of the qualifying examination. At least two graduate courses, with final examinations in the specialized courses listed below, must be taken during the first three semesters: (1) Statistical Mechanics, (2) Atomic and Nuclear Physics, (3) Solid State Physics, (4) Biophysics, (5) Elementary Particles, (6) Astrophysics, (7) Experimental Physics (Physics 109), (8) General Relativity. Note, however, that not all of the above courses will necessarily be given each year.

One semester of Advanced Quantum Mechanics (Physics 202a) will be a required course for all students.

Advanced Examinations. Advanced examinations will be in topics partitioned in the several areas of research interests of faculty. Faculty members working in each general area will function as a committee for this purpose and will provide information about their work through informal discussions and seminars. The advanced examination requirement consists of a written paper and an oral examination. While no original research by the student is expected, it is hoped that a proposal for a possible thesis topic will emerge. It is generally expected that the candidates will take the advanced examination in the field they wish to pursue for their Ph.D. theses, although there may be exceptions.

Thesis Research. After passing the advanced examination, the student begins work with an adviser who guides his or her research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The graduate committee of the physics faculty will appoint a dissertation committee to supervise the student's research. The student's dissertation adviser will be the chairman of the dissertation committee. The committee will recommend the student for admission to candidacy for the doctorate on recommendation of his or her adviser.

Dissertation and Final Oral Examination. The doctoral dissertation must represent a piece of research of a standard acceptable to the faculty committee appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to the dissertation research.

Courses of Instruction

*PHYSICS 100a. Particle Physics

*PHYSICS 100b. Continuum Physics

PHYSICS 101a. Electromagnetic Theory

Electrostatics, magnetostatics, boundary value problems.

Mr. Schnitzer

PHYSICS 101b. Electromagnetic Theory

Maxwell's equations. Quasi-stationary phenomena. Radiation.

Mr. Deser

PHYSICS 102a. Quantum Mechanics I

The harmonic oscillator, the hydrogen atom and spin systems, as exemplars of various formulations of nonrelativistic quantum theory. Spherical harmonics and time-dependent perturbation theory.

Mr. Gross

PHYSICS 102b. Quantum Mechanics II

Systems of identical particles. Coupling of angular moments. Scattering theory. Time-dependent perturbation theory. Semi-classical analysis of interaction of atomic systems and electromagnetic waves.

Mr. Pendleton

PHYSICS 103a. Statistical Physics

Review of thermodynamics; statistical postulates; microcanonical, canonical, and grand canonical ensembles; thermodynamics of Fermi, Bose, and classical systems; theory of non-ideal gases; the fluctuation-dissipation theorem; correlation functions; mean field theories of cooperative phenomena.

Mr. Schwartz

*PHYSICS 103b. Atomic and Nuclear Structure

PHYSICS 104a. Solid State Physics

The formal description of periodic systems. The vibrational and electronic properties of solids. Electron dynamics on the Fermi surface. The mean field theory of magnetic solids.

Mr. Schwartz

PHYSICS 104b. Solid State Physics II*PHYSICS 107b. Particle Physics**

The phenomenology of elementary particles, strong and weak interactions. Topics include properties of particles, kinematics and quantum mechanics of scattering and decay of properties, phase space, quark model, unitary symmetries and conservation laws.

Mr. Bensinger

PHYSICS 108b. Introduction to Astrophysics

This course is a survey of physical processes of importance in astrophysical situations. Topics will include stellar structure and evolution, the interstellar medium, galactic structure, electromagnetic processes in space, nucleosynthesis, etc.

Mr. Goldstein

PHYSICS 109a and b. Advanced Laboratory

Methods and techniques of experimental research.

Mr. Redfield.

PHYSICS 110aR. Mathematical Physics

Linear vector spaces: matrices, operators, Hilbert spaces. Orthogonal functions. Probability theory.

Mr. Schweber

PHYSICS 128a. Electronics for Scientists*PHYSICS 137aR. Science in the Second Half of the Nineteenth Century**

Investigations into the development of the conceptual framework for the description of "complex" systems in the physical sciences. Particular attention will be paid to the evolution of probabilistic descriptions. The historical setting will be outlined and the interaction and flow of ideas between the various disciplines traced.

Mr. Schweber

PHYSICS 152b. Biological Assembly

Physical principles in the construction of biological structures: forces, equilibria, symmetry and control mechanisms. Analysis of the structure and assembly of viruses, membranes and cellular organelles.

Mr. Caspar

PHYSICS 200a. General Relativity I**PHYSICS 200b. General Relativity II*****PHYSICS 201a. Advanced Many Body Physics*****PHYSICS 201b. Physics of Many Particle Systems****PHYSICS 202a. Advanced Quantum Mechanics**

Formal theory of scattering. Many particle systems. Elements of second quantization. Relativistic quantum mechanics. Klein-Gordon and Dirac equations.

Mr. Grisaru

***PHYSICS 202b. Relativistic Quantum Field Theory I**

PHYSICS 203a. Elementary Particle Physics I

Analysis of important recent developments in elementary particle physics.

Mr. Schnitzer

***PHYSICS 203b. Elementary Particle Physics II**

***PHYSICS 204b. Solid State Physics**

PHYSICS 207a. Plasma Physics

Electrodynamics and statistical mechanics of classical plasmas: the dielectric tensor, dispersion relations, fluctuation-dissipation theorem, dynamics of a test particle in a plasma, and plasma kinetic equations.

Mr. Gross

***PHYSICS 208a. Cosmology**

PHYSICS 209a and b. Laboratory Seminar I, II

Analysis of some important recent experiments.

Experimental Staff

PHYSICS 210a and b. Theoretical Seminar I, II

Analysis of important recent development in theoretical physics. *Theoretical Staff*

***PHYSICS 213a and b. Tutorial in Physics I, II**

***PHYSICS 218a. Astrophysical Gas Dynamics**

***PHYSICS 240b. Seminar in Biophysical Research**

***PHYSICS 250c. Chemical Physics Seminar**

***PHYSICS 254a. Seminar on Advanced Physical Techniques**

***PHYSICS 301a. Topics in Particle Physics**

PHYSICS 304a and b. Solid State Seminar I, II

Analysis and discussion of recent important developments in solid state physics.
Staff

***PHYSICS 311a. Advanced Topics in Mathematical Physics**

Research Courses

PHYSICS 401. Experimental Atomic and Molecular Physics

Mr. Lipworth

PHYSICS 403. Theoretical Atomic and Molecular Physics

Mr. Pendleton

PHYSICS 404. Experimental Nuclear Physics

Mr. Berko

PHYSICS 405. Theoretical Nuclear Physics

Mr. Schnitzer

PHYSICS 406. Experimental Elementary Particle Physics

Mr. Chrétien

PHYSICS 407.	Experimental Elementary Particle Physics	<i>Mr. Kirsch</i>
PHYSICS 408.	Experimental Elementary Particle Physics	<i>Mr. Bensinger</i>
PHYSICS 409.	Theoretical Elementary Particle Physics	<i>Mr. Deser</i>
PHYSICS 410.	Theoretical Elementary Particle Physics	<i>Mr. Grisaru</i>
PHYSICS 411.	Theoretical Elementary Particle Physics	<i>Mr. Pendleton</i>
PHYSICS 412.	Theoretical Elementary Particle Physics	<i>Mr. Schnitzer</i>
PHYSICS 413.	Theoretical Elementary Particle Physics	<i>Mr. Schweber</i>
PHYSICS 414.	Experimental Solid State Physics	<i>Mr. Berko</i>
PHYSICS 415.	Experimental Solid State Physics	<i>Mr. Gornall</i>
PHYSICS 416.	Experimental Solid State Physics	<i>Mr. Heller</i>
PHYSICS 418.	Theoretical Solid State Physics	<i>Mr. Gross</i>
PHYSICS 419.	Theoretical Solid State Physics	<i>Mr. Lange</i>
PHYSICS 420.	Theoretical Solid State Physics	<i>Mr. Schwartz</i>
PHYSICS 421.	Relativity	<i>Mr. Deser</i>
PHYSICS 422.	Mathematical Physics	<i>Mr. Grisaru</i>
PHYSICS 423.	Mathematical Physics	<i>Mr. Schweber</i>
PHYSICS 424.	Statistical Physics	<i>Mr. Gross</i>
PHYSICS 425.	Statistical Physics	<i>Mr. Pendleton</i>
PHYSICS 426.	Astrophysics	<i>Mr. Goldstein</i>
PHYSICS 427.	Astrophysics	<i>Mr. Stein</i>
PHYSICS 428.	Astrophysics	<i>Mr. Wardle</i>
PHYSICS 429.	Structural Biology	<i>Mr. Caspar</i>
PHYSICS 430.	Biophysics	<i>Mr. Redfield</i>
PHYSICS 431.	Experimental Solid State Physics	<i>Mr. Canter</i>
PHYSICS 432.	Experimental Atomic and Molecular Physics	<i>Mr. Wellenstein</i>
PHYSICS 433.	Structural Biology	<i>Mr. DeRosier</i>

POLITICS

Objectives

The graduate program in Politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

Faculty

Professor Ruth Schachter Morgenthau, *Chairwoman*

Professor Marver H. Bernstein

Professor Robert H. Binstock

Professor Donald Hindley

Professor George Armstrong Kelly

Professor Roy C. Macridis

Professor I. Milton Sacks

Professor Peter Woll

Visiting Professor Peter Bachrach

Associate Professor Robert J. Art

Associate Professor John T. Elliff

Associate Professor Martin A. Levin

Visiting Associate Professor Thomas E. Cronin

Assistant Professor Roy F. Grow

Assistant Professor Mark L. Hullung

Assistant Professor Peter B. Natchez

Assistant Professor Susan M. Okin

Assistant Professor Bruce I. Oppenheimer

Assistant Professor Steven J. Rosen

Assistant Professor Ralph Thaxton

Instructor Roger Z. George

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree may be awarded upon satisfactory completion of one year of residence, the demonstration of proficiency in one foreign language, and the submission of an approved specimen of graduate-level scholarly writing to the Department. In certain cases the Department will counsel the student to complete his graduate studies program with a terminal M.A.

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) supervised independent study facilities within the Department, (c) supervised teaching assistantships, (d) opportunities for study in the consortium of universities in the Boston area, and (e) the opportunity to incorporate work in related and relevant fields, e.g. economics, anthropology, philosophy. Each student is assigned to a departmental adviser who will help plan a professional and pertinent program of study. A continuity of faculty direction is insured throughout the program, with allowance for shifts in curricular interest.

Program of Study. The student must complete two years in residence and a minimum of twelve half-courses. Students with an M.A. in political science from other institutions may petition at the end of one year to have their previous graduate courses accepted for Brandeis credit; this may relieve them of as much as a year of residence requirement. (However, they must satisfy all Brandeis requirements: distribution of curriculum, language, etc.) For distribution, each graduate student will be required to take three of the following fields: American Government, Comparative Government, International Relations, Political Theory and/or Methods, or two of the above plus a category of study at the graduate level in another department of the University, as shall be judged valid for the student's program by this Department. (See below for a further clarification of the fields of distribution.)

Within each of the three fields chosen, graduate students will be required to take at least *two* semester courses. The standard work load for full-time students is at least three courses in each semester of their first two years of study. Fourth courses and audits are encouraged, but the load is deliberately set so that the student may supplement his regular course work with independently motivated reading and scholarship. Reading courses will not be offered to first-semester students and will be generally discouraged during the first year. By the end of the first year, students should have identified their major and at least one of their minor fields of interest, and should make this known both to their adviser and the Graduate Studies Chairman (In case of entering M.A.'s a complete program should be worked out by the end of the first semester.) At the end of the first year, an informal examination will be given to test the general progress of the student and suggest a future work plan. The examination will relate primarily to the courses taken by the student.

Normally, at the end of the fourth semester or early in the fifth, a formal oral and written examination for candidacy for the Ph.D. degree will be given covering the student's three fields but with emphasis on the sub-fields in which the student has done most of the work. Each examination is individual; it responds to the approved program of the student. The written examinations may be taken, upon arrangement, within any four-month period except summer holidays; the orals are, of course, simultaneous.

Language Requirements. By the end of the first year of study, the student must demonstrate proficiency in one approved foreign language. (Quantitative methods may be offered in lieu of one of the foreign languages but *not* for purposes of obtaining the M.A. degree.) Proficiency in a second language must be demonstrated prior to admission to Ph.D. candidacy. Language proficiency must be demonstrated at Brandeis and certified by the Department. Foreign language courses may not be counted for academic credit.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon completing the residence requirement, and passing the qualifying examination, fulfilling the language requirement and obtaining departmental approval of the subject and preliminary precis of the dissertation.

Dissertation and Defense. The dissertation will be completed under the supervision of the appropriate member of the departmental faculty. It must be sponsored by a depart-

mental committee of at least two members and have the approval of the graduate committee of the Department. It is assumed that the writing of the dissertation will take at least one year and, barring exceptional circumstances, not more than two and one-half years. The student must successfully defend the dissertation at a final oral examination conducted by his two departmental supervisors and another professor from outside the Department or from another university.

Teaching Assistantships. As determined by funds and undergraduate enrollments, the Department compensates students for teaching assistant work in an amount customarily based on need. First-year students do not normally receive teaching assistantships. It is the policy of the department that teaching experience is a normal and necessary part of the graduate training program and that ideally all students should have this opportunity regardless of compensation.

Fields and Sub-Fields. As stated above, curricular distribution is based on four major fields. Within the broad range of American Government, special concentrations may be achieved in such areas as urban studies, public administration and policy, institutions of government, parties and pressure groups, constitutional law. The student specializing in Comparative Government should have a command of the important theories and theoretical techniques, and cluster of institutions or processes, such as development, political economy, or parties and bureaucracies, as well as familiarity with a designated geographical area. In International Politics, the student also needs a broad mastery of the principal theories, together with a specialization in such topics as international sub-systems, diplomatic history, security policy, comparative foreign policy, or American foreign policy, etc. In Theory and/or Methods, the student should be closely familiar with a major section of the history of political thought (ancient or modern) and the theories therein presented and developed, or may place primary emphasis on the so-called "scope and methods of modern political science." This latter category implies not just the knowledge of quantitative techniques but an ability to criticize their application and a general grasp of the intellectual climate in which the philosophy of social science has developed.

Since the field outside the department is permitted for curricular distribution, it should be emphasized that no student will be allowed to concentrate exclusively in American studies.

The possibility of particular concentrations and emphases within the four major fields designated above will, of course, vary with the course offerings and the supervisory capacities of the departmental faculty.

Courses of Instruction

AMERICAN GOVERNMENT

POLITICS 101aR. Parties, Pressure Groups and Public Opinion

This course will examine the means by which mass publics get involved in politics. Some of the topics covered are: nominating politics, the psychology of participating and lobbies.

Mr. Oppenheimer

POLITICS 105b. Reform Movements and Reform Politics

This course will analyze reform movements and reform politics in Twentieth Century America. It will analyze and assess the role which individuals, groups and mass movements have played in seeking to get their views onto the national policy agenda, and adopted. Attention will be paid to those who sought to change policies as well as to those who have sought to transform political processes. *Mr. Cronin*

POLITICS 107b. The Politics of Public Policy

This course will examine the nature of public policy outputs of political subsystems in American government. Particular attention will be paid to education, welfare, medical care and tax reforms.

Mr. Oppenheimer

POLITICS 111a. The American Congress

This course will discuss the structure and behavior of the Congress. It will include a discussion of the origins and consequences of the committee system and the rules governing each House of Congress, particularly those relating to the Seniority System. Additionally, this course will consider the relationship between the Congress and the Executive Branch.

Mr. Oppenheimer

POLITICS 113b. The American Presidency

An analysis of the contemporary nature and role of the American Presidency. The course will include discussions of the sources of presidential power, the constitutional basis of the presidency, the role of the Executive Office, the relationship between the Presidency and Congress, the Judiciary, and the bureaucracy.

Mr. Cronin

***POLITICS 114a. The Legal Process: Law and Public Policy**

***POLITICS 115a. History of American Constitutional Law and Theory**

POLITICS 115b. American Constitutional Law and Theory

An examination of the Supreme Court's contemporary constitutional role, with emphasis on the nature and dynamics of Supreme Court decision-making; competing ideas of the proper scope for judicial review; and the political and social context for constitutional change.

Mr. Woll

***POLITICS 116bR. Civil Liberties in America**

POLITICS 117a. Administrative Law

An examination of the role of administrative agencies in law making and adjudication. Particular emphasis will be given to problems of defining and protecting the public interest as well as the rights of individuals and groups directly involved in administrative proceedings.

Mr. Woll

POLITICS 118a. Seminar: Policy Formation

A study of the aspects of policy making with reference to various organs of decision making in the Federal Government.

Mr. Woll

POLITICS 119aR. Power in the Urban Context

An examination of the development in urban areas of policies relating to poverty, class, race and the administration of justice. Special emphasis on the political conflict generated in the development and the relationship of political decision makers and social science "experts."

Mr. Bachrach

POLITICS 120aR. Politics of Urban Areas

An examination and analysis of government, politics, and policy development in urban America. Throughout the latter half of the course, special attention will be given to questions concerning the development and implementation of public policy for urban areas.

Mr. Binstock

***POLITICS 121a. The Politics of Poverty, Class and Race in Urban Areas**

***POLITICS 123b. The Politics of Urban Criminal Justice**

POLITICS 124a. Labor and Politics in the United States

Emphasizing the historical approach this course is an analytical treatment of the theories and practices of labor participation in American politics. *Mr. Sacks*

COMPARATIVE POLITICS

POLITICS 128a. Contemporary Peasant Revolution

A theoretical introduction to revolutionary politics in peasant societies. The focus is on the role of peasants making revolutions in both past and present agrarian political orders. Comparative attention to the nature of politics in traditional peasant societies, the recurring causes of peasant revolts, and the political factors which facilitate victorious rural revolutions. Emphasis is on explaining the origins, growth, and success of peasant revolutions. Specific focus on England, France, China, Japan, Vietnam, Mexico, Russia, Algeria, and Cuba. *Mr. Thaxton*

POLITICS 130b. The Political and Social Institutions of the Soviet Union

After a brief historical study of the 1917 revolutions, this course will analyze the ideological and institutional sources of Soviet state and party activity. Particular attention will be devoted to institutional development and its political, economic and social causes. *Mr. Grow*

***POLITICS 140a. The Politics of Africa**

POLITICS 141aR. National and International Politics of Southern Africa

A study of the political economy of southern Africa, including the Republic of South Africa, Mozambique, Angola, Namibia, Zimbabwe (Rhodesia), Zambia, Malawi. Analysis will focus upon the dynamics of race conflicts, the development of clashing nationalisms, and the evolution of international conflicts in southern Africa.

POLITICS 144a. Political Change in Latin America: I

This course focuses on the elements of stability and instability in the region. Specific examination is made of the Mexican and Cuban revolutions, the aborted Guatemalan revolution of 1944-54, and the "maverick" constitutional democracy of Costa Rica. *Mr. Hindley*

POLITICS 144b. Political Change in Latin America: II

This course concentrates on the politics of Brazil, Argentina and Bolivia: respectively a military dictatorship, a Peronista question mark, and the locale of one of Latin America's three genuine revolutions. *Mr. Hindley*

POLITICS 147a. Government and Politics of China

An analysis of the sources of Chinese political behavior, emphasizing the post-revolutionary period since 1949, but touching also on historical, cultural and sociological factors. *Mr. Grow*

POLITICS 147b. Government and Politics of Japan

An examination of the history, development and current status of political insti-

tutions in Japan. Emphasis will be placed upon the relationship between political culture and governmental institutions.

Mr. Grow

POLITICS 150a. Government and Politics: Southeast Asia

An introduction to major aspects of the political development of Southeast Asia in the modern period: the impact of Western colonialism, the nationalist struggles, the post-independence attempts to establish viable political systems, communism, and intervention from outside the region.

Mr. Hindley

***POLITICS 155b. Seminar: Political Development and Modernization**

POLITICS 156b. European Political Systems

This course will deal in depth with parties, ideologies, and governmental institutions of European countries, with particular emphasis on Britain, France, and Germany.

Mr. Macridis

POLITICS 164a. Comparative Foreign Policy

This course will deal with a discussion of the underlying factors shaping foreign policy and a detailed discussion of the foreign policy of some of the major powers including the United States and the Soviet Union.

Mr. Macridis

INTERNATIONAL POLITICS

POLITICS 168a. American Foreign Policy

An historical analysis of these American foreign policy strategies: isolationism, imperialism, collective security, balance of power, and containment. The effects of foreign pressures and domestic politics on these strategies will be considered. The course will focus on the period 1890 to 1950.

Mr. George

POLITICS 168b. American Foreign Policy

A post-World War II analysis of American foreign policy. The course will focus on three areas: how foreign policy decisions have been made, how they have been implemented, and what effects they have had.

Mr. Art

***POLITICS 169b. The Military-Industrial Complex**

POLITICS 171b. Multinational Enterprises and National Power

The political implications of the rapid growth over the last two decades of multinational enterprises, involving raw materials and manufacturing, often tying together trade and investment. Effects on national and international politics of the decline in economic power perceived by sovereign states.

Ms. Morgenthau

***POLITICS 175a. International Relations in the Middle East**

POLITICS 176b. International Organizations

This course analyzes the continuing institutionalization of international organizations from the nineteenth century to the present, with primary emphasis on contemporary developments. The primary focus will be aspects of international affairs, especially the maintenance of peace and the promotion of international cooperation.

Mr. George

***POLITICS 177b. China and the Soviet Union in World Affairs**

POLITICS 178b. International Politics in the Pacific Area

Analysis of the forces underlying international power relations in contemporary Asia. Topics include the emergence of revolutionary China, the Sino-Japanese conflict, the American victory over Japan in WWII, Sino-Soviet alliance and dispute, the Korean War, the emergence of independent Third World nations, rise and fall of neutralism in South and Southeast Asia, the Vietnam War, and Chinese-American detente. Analysis of Asia and China in the international political economy as a whole. Focus on trade, loans, gold, energy, and balance of payments as well as war, nuclear deterrence, and power alliances. Consideration of issues from theoretical angles including Kremlinology, realpolitics, international integration, behavioral paradigms, and Maoism.

Mr. Thaxton

See also Politics 164a, Comparative Foreign Policy.

POLITICAL THEORY AND METHODS**POLITICS 182a. Political Thought from Plato to Machiavelli**

Ms. Okin

POLITICS 182b. Political Thought from Machiavelli to Marx

The first segment of the course will examine struggles between proponents and opponents of the old regime, with special emphasis on the germination of radical thought in pre-revolutionary Europe. The second segment will deal with intellectual responses to the French Revolution.

Mr. Hulliung

POLITICS 190a. Democratic Political Thought

A study of "classical" political theory, its 20th century critics, and of the "pluralist" alternative and its critics. The course will focus on the relationship between normative political theory and "value-free" political science, and will attempt to assess the value and practicability of participation as a democratic ideal for the modern world.

Ms. Okin

POLITICS 193a. Theories of Political Sociology

Concepts developed by "seminal" thinkers and their application to contemporary political analysis. The course will examine the writings of Marx, Freud, Durkheim, Weber and the attempts of present-day scholars to utilize their insights.

Mr. Hulliung

POLITICS 194aR. Empirical Political Theory

Mr. Thaxton

POLITICS 195a. Communist Political Thought—Marx to Mao

An introduction to the political and economic themes in communist literature, concentrating on the works of Marx, Engels, Lenin, Trotsky, Stalin and Mao Tsetung. The course will investigate in both topical and historical manner basic theories of state, economic organization, social conflict, political activity and revolution in their writings.

Mr. Grow

POLITICS 196b. Contemporary Political Theory

Readings from Camus, Sartre, Sorel, Merleau-Ponty, etc. The course will examine and criticize, romantic and existentialist theories of politics.

Mr. Hulliung

POLITICS 198b. Women in the History of Political Thought

A study of the ideological roots of sexism in Western culture. By critically assessing the arguments about women of some of the major political philosophers, in the

context of their ideas as a whole, we will attempt to assess the validity of discrimination according to sex. The course will conclude with the examination of some recent constitutional law cases pertaining to women and sex discrimination.

Ms. Okin

POLITICS 203a. Comparative Politics

An examination of the approaches, concepts and theories in the field of comparative politics.

Ms. Morgenthau

POLITICS 203b. Theory and Political Process

An examination of the relationship among political theory process and institutions. The course will examine selected topics in political theory, in the American context.

Mr. Bachrach

POLITICS 204b. International Politics

An examination of approaches, concepts and theories in the field of international politics.

Mr. Art

The following 200-level courses will be offered as seminars for graduate students in conjunction with corresponding 100-level courses. The graduate students will take the 100-level course but will meet in special and regular sessions. (See appropriate 100-level course for description; e.g., Politics 115b for Politics 215b description.)

POLITICS 211a. The American Congress

Mr. Oppenheimer

POLITICS 213b. The American Presidency

Mr. Cronin

POLITICS 215b. American Constitutional Law and Theory

Mr. Woll

POLITICS 217a. Administrative Law

Mr. Woll

POLITICS 218a. Policy Formation

Mr. Woll

POLITICS 219aR. Power in the Urban Community

Mr. Bachrach

POLITICS 220aR. Politics of Urban Areas

Mr. Binstock

POLITICS 224a. Labor and Politics in the United States

Mr. Sacks

***POLITICS 240a. The Politics of Africa**

POLITICS 241aR. National and International Politics of Southern Africa

Ms. Morgenthau

POLITICS 256b. European Political Systems

Mr. Macridis

POLITICS 264a. Comparative Foreign Policy

Mr. Macridis

POLITICS 271b. Multi-National Enterprises and National Power

Ms. Morgenthau

POLITICS 282a. Political Thought from Plato to Machiavelli

Ms. Okin

POLITICS 282b. Political Thought from Machiavelli to Marx

Mr. Hulliung

POLITICS 290a. Democratic Political Thought

Ms. Okin

POLITICS 293a. Theories of Political Sociology

Mr. Hulliung

POLITICS 301—317. Readings in Politics

301a and b.	<i>Mr. Binstock</i>	*310a and b.	<i>Mr. Elliff</i>
302a and b.	<i>Mr. Hindley</i>	311a and b.	<i>Mr. Grow</i>
303a and b.	<i>Mr. Kelly</i>	312a and b.	<i>Mr. Hulliung</i>
304a and b.	<i>Mr. Macridis</i>	*313a and b.	<i>Mr. Natchez</i>
305a and b.	<i>Ms. Morgenthau</i>	314a and b.	<i>Ms. Okin</i>
306a.	<i>Mr. Sacks</i>	315a and b.	<i>Mr. Oppenheimer</i>
307b.	<i>Mr. Art</i>	*316a and b.	<i>Mr. Rosen</i>
*308a and b.	<i>Mr. Levin</i>	317a and b.	<i>Mr. Thaxton</i>
309a and b.	<i>Mr. Woll</i>		

POLITICS 400—417. Dissertation Research

Independent research for the Ph.D. degree.

401.	<i>Mr. Binstock</i>	410.	<i>Mr. Elliff</i>
402.	<i>Mr. Hindley</i>	411.	<i>Mr. Grow</i>
403.	<i>Mr. Kelly</i>	412.	<i>Mr. Hulliung</i>
404.	<i>Mr. Macridis</i>	413.	<i>Mr. Natchez</i>
405.	<i>Ms. Morgenthau</i>	414.	<i>Ms. Okin</i>
406.	<i>Mr. Sacks</i>	415.	<i>Mr. Oppenheimer</i>
407.	<i>Mr. Art</i>	416.	<i>Mr. Rosen</i>
408.	<i>Mr. Levin</i>	417.	<i>Mr. Thaxton</i>
409.	<i>Mr. Woll</i>		



PSYCHOLOGY

Objectives

The graduate program in Psychology leads to the degree of Doctor of Philosophy. The goal of the program is to develop competent research psychologists and teachers who will become contributors to knowledge in psychology. Towards this end, an emphasis is placed on research activity, starting in the first semester of graduate study. The program of study reflects a belief that the student should develop an area of research specialization and also should be exposed to a range of topics in general psychology. Dissertation supervision is available in the following areas: Sensation, Perception, Memory, Learning, Thinking, Comparative, Child, Personality, Psychopathology, and Social Psychology.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Students are admitted on a competitive basis which includes evaluation of previous academic record, recommendations, results of the Graduate Record Examinations (Aptitudes and Psychology Achievement Tests), and the Miller Analogies Test.

Faculty

Associate Professor James R. Lackner, *Chairman*: Human experimental psychology. Psycholinguistics.

Professor Ricardo B. Morant: Experimental psychology. Developmental psychology. Perceptual mechanisms. Sensation and perception.

Professor Zick Rubin: Social psychology. Interpersonal relationships.

Professor Marianne L. Simmel: Sensory physiology. Cognitive processes. Perception.

Associate Professor Maurice Hershenson: Perception. Developmental theory.

Visiting Associate Professor David J. Ingle: Physiological psychology.

Associate Professor Arthur Wingfield: Human memory. Cognitive processes. Experimental psychology.

Associate Professor Jerome Wodinsky: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor Lawrence E. Arend Jr.: Psychophysiology of human vision.

Assistant Professor Susan Goldberg: Developmental psychology.

Assistant Professor Donald N. Kaiser: Clinical psychology.

Assistant Professor Raymond Knight: Clinical psychology. Experimental psychopathology.

Assistant Professor Leslie A. McArthur: Social psychology. Interpersonal attraction.

Degree Requirements

Doctor of Philosophy

Program of Study. Although there is a two-year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during residency.

Research. Each student will devote one-quarter of his or her time to research the first semester of the entering year. For all subsequent semesters, students shall devote a minimum of one-half time to research.

Research Reports. Students will submit reports on their research for the preceding year, in journal form, in time to permit evaluation of the first project by the end of the third semester, and of the second project by the end of the fifth semester. In the event that a student's first year research report is unsatisfactory, the student will be required to take a terminal master's degree completed not later than the end of the fourth semester of residence. Students who have satisfactorily completed the research requirement will be permitted to continue their work toward the doctorate with no formal requirement of a master's degree.

Course Requirements. Entering students shall take *two seminars* and Psychology 210a in the first semester of residence, one seminar and Psychology 210b in the second semester. After that they shall take two seminars per semester in the second year, and one seminar each semester thereafter. Course selection will not be restricted to the Psychology Department, but will be arranged by the student in consultation with his faculty adviser. Two of the courses that the student takes during his or her graduate training must be outside of the area of specialization.

Qualifying Examinations. In the early part of the fifth semester of residence, each student will be thoroughly examined in the historical, theoretical and empirical literature related to the student's area of specialization, broadly conceived. The chairman of the department will appoint a three-member committee to administer the qualifying examination from a list provided by the student's dissertation adviser. In the event that the student fails his or her qualifying examination, he or she will be awarded a terminal master's degree on the basis of an adequate second-year research paper. A student may petition the department to take the examination a second time if necessary.

Breadth Requirement. All students graduating from the program should be qualified to teach an introductory course in Psychology covering the range of topics included in both of our own Psychology 1a and 2a courses. All students, either during their first or second year in residence, will be required to assist in both the 1a and 2a courses. The student assistants in the courses will be held responsible for the contents of a reading list provided at the beginning of each course in which they assist. The reading list will be prepared by a committee of faculty appointed by the chairman. The same committee will prepare a written examination, based on the reading list, that will be used to evaluate each student's performance at the end of the course.

Language Requirement. Reading proficiency in at least one foreign language is required. This language must be one in which substantial psychological literature exists. Language examinations are offered by the department four times a year, usually in September, December, February and May. Students are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

Admission to Candidacy. A student may be admitted to candidacy for the doctorate upon fulfilling the above requirements.

Dissertation and Defense. Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the department, a dissertation committee of three or more members will be appointed by the department chairman, including the dissertation sponsor as chairman of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the department faculty.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Courses of Instruction

PSYCHOLOGY 116b. Light, Color and Vision

Visual perception considered from the points of view of physics, biology, and psychology. Wave and quantal natures of light; anatomy and physiology of the visual pathway; color vision; visual acuity and flicker; form and brightness perception. Laboratory work and demonstrations will be integrated with lectures.

Prerequisite: Permission of instructors.

Enrollment limited to twenty students.

Messrs. Arend and Lange

PSYCHOLOGY 117a. Social Psychology

A consideration of the major questions and research strategies of social behavior. Special emphasis will be given to social influence, social cognition, and person perception, social determinants of self-concept, violence, and applications of experimental social psychology to social problems.

Ms. McArthur

PSYCHOLOGY 118b. Physiological Psychology

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

Mr. Ingle

PSYCHOLOGY 119a. Comparative Psychology

The analysis of the behavior of organisms from a comparative and evolutionary perspective, considering genetic, humoral, sensory, and experiential factors in the control of behavior.

Prerequisite: Permission of the instructor.

Mr. Wodinsky

*PSYCHOLOGY 120a. Experimental Psychology

PSYCHOLOGY 124b. Human Memory

A detailed examination of traditional and contemporary views on the nature and processes involved in short- and long-term memory.

Mr. Wingfield

PSYCHOLOGY 125b. Recent Advances in Animal Behavior

Mr. Wodinsky

PSYCHOLOGY 126a. Research Methods in Personality and Social Psychology

A study of the design and execution of personality and social psychology research together with practical experience in carrying out several research projects.

Prerequisite: Permission of the instructor required.

Enrollment limited to fifteen students.

Ms. McArthur

PSYCHOLOGY 126aR. Research Methods in Personality and Social Psychology

Ms. McArthur

PSYCHOLOGY 127aR. Temporal Patterning of Behavior

Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.

Enrollment limited to twenty students.

Mr. Lackner

PSYCHOLOGY 128b. Sensory Processes

Examination of the anatomy, physiology and psychophysics of the sensory systems, with special emphasis on the visual and auditory systems. Primary emphasis will be on the problem of sensory coding and human sensation. Enrollment limited to fifteen students.

Mr. Arend

PSYCHOLOGY 134a. Abnormal Psychology

A general introduction to psychopathology. Various theoretical models will be discussed. The techniques and findings of research, both clinical and experimental, will be emphasized.

Mr. Knight

PSYCHOLOGY 138a. Seminar: Conceptions of Social Relationships

Examines the way in which people come to view their own and others' social relationships. These conceptions will be considered primarily from the perspectives of cognitive social psychology and cognitive development. In addition, historical, sociological, and cross-cultural perspectives will be considered.

Mr. Rubin

PSYCHOLOGY 140a. Learning and Behavior

Current theories of learning will be explored in the light of experimental evidence derived from animal studies.

Mr. Wodinsky

PSYCHOLOGY 141b. Biological Bases of Motivation

Topics to be treated include hunger, thirst, migration, sexual behavior and parental behavior. Evidence from biology, neurophysiology and endocrinology will be evaluated.

Enrollment limited to fifteen students.

Mr. Wodinsky

PSYCHOLOGY 143b. Cognitive Processes

Cognitive factors in perception, attention, memory and language. Experimental investigations will be emphasized.

Prerequisite: Permission of the instructor

Enrollment limited to fifteen students.

Mr. Wingfield

PSYCHOLOGY 150a. Introduction to Psychological Theory*PSYCHOLOGY 159a. Perception**

A survey of the field of perception covering method, the perception of space, perceptual constancy, figure formation, attention, recognition and visual information processing.

Mr. Hershenson

PSYCHOLOGY 159b. Seminar in Perception

Beginning with a discussion of some historical and philosophical problems in perception, the course will survey current theories and research. Examples will be drawn from investigations related to the study of the phenomenal constancies, space perception, perceptual learning and development and the effects of set and motivational variables.

Mr. Morant

PSYCHOLOGY 161a. Mental Health in the United States: Supervised Field Work

Students pursue a program of reading and spend one day a week working or observing in some clinical installation; there are weekly class meetings.

Prerequisite: Permission of the Instructor. Psychology 134, 145 or 171. *Mr. Knight*

PSYCHOLOGY 171b. Schools of Psychotherapy

The theories and techniques of several schools of psychotherapy and behavior modification are considered. The theories of personality, methods of intervention, goals of therapy, and relevant research will be emphasized.

Prerequisite: Psychology 134a or 137a.

Mr. Knight

PSYCHOLOGY 177a. Neural Basis of Behavior

A survey of studies on the neurophysiology and behavior of a variety of organisms, both vertebrate and invertebrate, which provide insight into the means by which nervous systems control behavior. The basic properties of nerve cells, emergent properties of nerve networks, and general theories of brain function will be covered.

Prerequisite: Permission of the instructor.

Mr. Ingle

PSYCHOLOGY 180a. Seminar: Writing in the Behavioral Sciences

Intends to foster an appreciation for good writing in psychology and other behavioral sciences. Examines both "scholarly" and "popular" writing, considering the possibility that the two are not incompatible. Also considers the scientific communication system and the role of writing in the development of public policy. Students write and exchange feedback on short papers. Occasional visits by writers and editors specializing in the behavioral sciences.

Prerequisite: Permission of the instructor.

Enrollment limited to fifteen students.

Mr. Rubin

PSYCHOLOGY 194b. Language and Mind

An examination of Noam Chomsky's approach to the theory of language, concentrating on the notion of *innate ability to learn human language*. The course will discuss philosophical and psychological consequences of Chomsky's theory, discussing applications of his conceptual framework to the study of other human activities such as reasoning, perception, sensory-motor coordination, and the understanding of music.

Messrs. Jackendoff and Lackner

PSYCHOLOGY 200a and b. Observation and Research Strategies in Psychology

Staff

PSYCHOLOGY 201b. Seminar in Abnormal Psychology

This course deals with research in psychopathology, focusing on methodological problems and experimental results. A broad range of topics is discussed, but current research in the psychoses (affective and cognitive) is emphasized. *Mr. Knight*

PSYCHOLOGY 202b. Seminar in Attribution Theory

This course will focus on (1) determinants of people's beliefs about the causes of behavior and (2) consequences of varying causal beliefs. Beliefs about the causes of one's own behavior as well as the causes of other people's behavior will be treated. Determinants of causal beliefs to be covered include social information, language, attention, motives, and individual differences. Consequences of causal beliefs to be

covered include expectancies, interpersonal attraction, emotionality, and achievement.

Ms. McArthur

***PSYCHOLOGY 203b. Seminar in Sensation and Perception**

***PSYCHOLOGY 204b. Contemporary Issues in Psychology**

PSYCHOLOGY 205a. Seminar in Memory, Attention and Language

Recent research and theoretical developments in the study of memory as they relate to traditional and contemporary views of selective attention and language in man.

Mr. Wingfield

***PSYCHOLOGY 206b. Seminar in Learning**

PSYCHOLOGY 207a. Seminar in Perception

A survey of information processing, approaches to perception, perceptual memory and recognition.

Mr. Morant

***PSYCHOLOGY 208b. Seminar in Thinking and Problem Solving**

PSYCHOLOGY 210a. Advanced Psychological Statistics

Probability and inferential statistics for experimental research. Probability, random variables, some important probability distributions, statistical inference, large- and small-sample tests of hypotheses concerning population means and variances.

Mr. Arend

PSYCHOLOGY 210b. Advanced Psychological Statistics

Topics to be covered will include: correlation and regression, introduction to matrix algebra, multiple regression, partial and multiple correlation, principles of experimental design, and analysis of variance.

Prerequisite: Psychology 210a or permission of the instructor *To be announced*

PSYCHOLOGY 211a. Seminar in Developmental Psychology: Early Social Relations

A seminar which will review theory and method in the study of parent-infant interaction.

Ms. Goldberg

***PSYCHOLOGY 212a. Methodology for Research in Personality/Social Psychology**

***PSYCHOLOGY 213a. Quantitative Methods for Personality Research**

***PSYCHOLOGY 214a. History of Psychological Thought**

***PSYCHOLOGY 215a. Psychological Scaling Methods and Theory**

***PSYCHOLOGY 216a. History of Social Psychology**

***PSYCHOLOGY 217b. Research Seminar in Clinical Psychology**

***PSYCHOLOGY 218a. Seminar in Social Psychology**

***PSYCHOLOGY 219b. Physiological Psychology**

PSYCHOLOGY 220-231. First Research Project

220a and b.	<i>Mr. Arend</i>	226a and b.	<i>Ms. McArthur</i>
221a and b.	<i>Ms. Goldberg</i>	227a and b.	<i>Mr. Morant</i>
222a and b.	<i>Mr. Hershenson</i>	228a and b.	<i>Mr. Rubin</i>
223a and b.	<i>Mr. Ingle</i>	229a and b.	<i>Ms. Simmel</i>
224a and b.	<i>Mr. Knight</i>	230a and b.	<i>Mr. Wingfield</i>
225a and b.	<i>Mr. Lackner</i>	231a and b.	<i>Mr. Wodinsky</i>

PSYCHOLOGY 250-261. Second Research Project

250a and b.	<i>Mr. Arend</i>	256a and b.	<i>Ms. McArthur</i>
251a and b.	<i>Ms. Goldberg</i>	257a and b.	<i>Mr. Morant</i>
252a and b.	<i>Mr. Hershenson</i>	258a and b.	<i>Mr. Rubin</i>
253a and b.	<i>Mr. Ingle</i>	259a and b.	<i>Ms. Simmel</i>
254a and b.	<i>Mr. Knight</i>	260a and b.	<i>Mr. Wingfield</i>
255a and b.	<i>Mr. Lackner</i>	261a and b.	<i>Mr. Wodinsky</i>

PSYCHOLOGY 280-291. Advanced Readings

280a and b.	<i>Mr. Arend</i>	286a and b.	<i>Ms. McArthur</i>
281a and b.	<i>Ms. Goldberg</i>	287a and b.	<i>Mr. Morant</i>
282a and b.	<i>Mr. Hershenson</i>	288a and b.	<i>Mr. Rubin</i>
283a and b.	<i>Mr. Ingle</i>	289a and b.	<i>Ms. Simmel</i>
284a and b.	<i>Mr. Knight</i>	290a and b.	<i>Mr. Wingfield</i>
285a and b.	<i>Mr. Lackner</i>	291a and b.	<i>Mr. Wodinsky</i>

PSYCHOLOGY 400-411. Dissertation Research

Independent research for the Ph.D. degree.

400.	<i>Mr. Arend</i>	406.	<i>Ms. McArthur</i>
401.	<i>Ms. Goldberg</i>	407.	<i>Mr. Morant</i>
402.	<i>Mr. Hershenson</i>	408.	<i>Mr. Rubin</i>
403.	<i>Mr. Ingle</i>	409.	<i>Ms. Simmel</i>
404.	<i>Mr. Knight</i>	410.	<i>Mr. Wingfield</i>
405.	<i>Mr. Lackner</i>	411.	<i>Mr. Wodinsky</i>

RUSSIAN

See Joint Program of Literary Studies (page 89).



SOCIOLOGY

Objectives

The graduate program in Sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

Faculty

Professor Egon Bittner, Chairman: Sociology of law. Social controls.

Professor Emeritus Everett C. Hughes: Race and ethnic relations. Occupations and work systems.

Professor Morris S. Schwartz: Social psychology. Social psychiatry.

Professor Maurice R. Stein: Communities. Sociology of literature.

Professor Kurt H. Wolff: Sociological theory. Sociology of knowledge.

Professor Irving K. Zola: Deviance. Sociology of health and illness.

Associate Professor Gordon A. Fellman: Social psychology. Stratification.

Associate Professor Charles S. Fisher: Sociology of science. Collective behavior.

Associate Professor Rosabeth Moss Kanter: Social organization and social psychology. Sociology of law. Sociology of the family.

Associate Professor George W. Ross: Political sociology. Social theory.

Assistant Professor Charles Derber: Social psychology. Phenomenology.

Assistant Professor Karen E. Fields: Sociology of religion. Sociology of development.

Assistant Professor Gila J. Hayim: Social and psychological theory. Criminology.

Visiting Assistant Professor Kristine M. Rosenthal: Developmental psychology and education. Women's studies.

Assistant Professor Charlotte Weissberg: Social psychology, socialization, and social theory. Sociology of education.

Degree Requirements

Doctor of Philosophy

Program of Study. Students entering the Ph.D. program in Sociology are expected to undertake a two-year program of course work, as a part of which they are obliged to take the departmental Pro-Seminar (Sociology 290). The initial program of studies will be arranged in consultation with the Graduate Student's Adviser. Consideration will be given to graduate work done elsewhere but formal transfer credit will be assigned only after the successful completion of the first year of study.

Requirements for the M.A. An M.A. may be granted after the successful completion of three semesters of course work, passing one foreign language examination, and submission of two substantial research papers to be approved by the department.

Residence Requirements. The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

Language Requirements. Candidates for the Ph.D. degree must demonstrate either proficiency in two foreign languages or knowledge of one language in depth. At least one of the languages must be chosen from French, German, Italian, Spanish, or Russian. The choice of the second language is subject to approval by the department. Students may petition to substitute quantitative methods for the second foreign language.

Qualifying Examinations. During a student's residency until the time of his or her formal admission to candidacy, the specific planning, evaluations and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee composed of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study and research, the student will take an oral qualifying examination covering both general sociology and the areas of the student's special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.

Admission to Candidacy. A student shall be eligible for admission to candidacy for the Ph.D. upon fulfillment of the residence requirements, the foreign language requirement, passing the departmental qualifying examination, and submission of an acceptable dissertation proposal. The work on the doctoral dissertation will be supervised by a Dissertation Committee.

Dissertation and Final Oral Examination. The Ph.D. dissertation may be accepted by the department upon the recommendation of the Dissertation Committee. To be granted the degree, the student is required to defend the dissertation in a public Final Oral Examination.

Courses of Instruction

SOCIOLOGY 102a. Social Psychiatry

Training in peer counseling is offered through classes, supervised sessions with other students, and community work. Theory, social contexts and practice of reevaluation counseling is stressed. Other social psychiatric approaches are also covered.

Enrollment limited to twelve students.

Mr. Stein

SOCIOLOGY 102b. Social Psychiatry

Training in advanced peer counseling is offered through classes, supervised sessions with other students, and community work. Theory, social contexts and practice of reevaluation counseling are stressed. Other social psychiatric approaches are also covered.

Prerequisite: Sociology 102a or equivalent.

Enrollment limited to twelve students.

Mr. Stein

*SOCIOLOGY 103a. The Sociology of Mental Illness and Health

*SOCIOLOGY 104a. Sociology of Education

SOCIOLOGY 106aR. Sociology of Literature

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man.

Mr. Stein

SOCIOLOGY 107a. Issues in Social Psychology

A review of selected contemporary sociological and social-psychological approaches to understanding the self and the problem of identity. Contemporary forms of social and personal identity in American society will be explored. Students will keep a journal in which they will explore social and psychological dimensions of their own identity, in relation to the concepts of the course. *Mr. Derber*

SOCIOLOGY 107bR. Issues in Social Psychology

This course will consist of a critical examination of the connections between social personality and social structure as these have been developed in American sociological literature. Special emphasis will rest on how theories of personality and society help to account for social stability and social change. *Ms. Weissberg*

SOCIOLOGY 108b. Critiques of Contemporary Society

Analysis of major approaches to contemporary sociology and critical theory, and their implications for modern man. The emphasis is on the methods and functions of social criticism. Theorists like Weber, Ellul, Marcuse, Brown, Freire, and others will be considered. *Ms. Hayim*

SOCIOLOGY 110b. Sociology of Knowledge

- History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature. *Mr. Wolff*

SOCIOLOGY 111a. Political Sociology

Patterns of conflict and consensus and their relationship to political change and stability in contemporary America. Examination of changing views of power and community from New Deal/Cold War/1950's America to the conflicts of the 1960's and deal analytically with issues of power and political socialization. *Mr. Ross*

SOCIOLOGY 112b. Social Class, Freedom and Equality

The concept of social class; its role in determining life chances, life styles, income, occupation and power; theories of class and inequality; selected social psychological aspects of social class and inequality; American class structure and dynamics; American social class and imperialism. *Mr. Fellman*

***SOCIOLOGY 115a and b. Evolution of Human Social Organization**

***SOCIOLOGY 116b. Multi-Ethnic Society**

SOCIOLOGY 117a. Work and Society

A comparison of work and occupational systems in various cultures. Social organization of occupations and the place of work in the life of the individual. *Mr. Bittner*

SOCIOLOGY 118aR. American Jewish Life and Institutions

See NEJS 161aR. *Mr. Sklare*

***SOCIOLOGY 118b. Sociology of the American Jewish Community**

***SOCIOLOGY 119a. Institutions of a More Humane Society**

***SOCIOLOGY 120a and b. Sociology of Underdevelopment**

***SOCIOLOGY 122a. Sociology of Power**

***SOCIOLOGY 125a. Quantitative Methods in Research**

***SOCIOLOGY 126a. Sociology of Deviance**

***SOCIOLOGY 126b. The Institutions of Social Control**

***SOCIOLOGY 127b. Deviant Communities**

SOCIOLOGY 130a. The Family (Micro-Social Perspectives)

Exploration of the structure and dynamics of the American family, along with historical and cross-cultural perspectives. Particular attention to the role of women and children in society. Relationship of the family to economic and political institutions. Alternative models for family life including communes. *Ms. Rosenthal*

***SOCIOLOGY 130b. The Family (Macro-Social Perspectives)**

SOCIOLOGY 132a and b. Urban Sociology: Field Studies in Social Class

Field investigations of social class in American lower, working, middle and upper class settings. Class sessions will discuss field observations and students' reactions to field experiences.

Prerequisite: Sociology 112b or equivalent.

Enrollment limited to ten students.

Mr. Fellman

***SOCIOLOGY 133b. Comparative Urban Cultures**

***SOCIOLOGY 135a. Group Process**

***SOCIOLOGY 135b. Advanced Group Process**

***SOCIOLOGY 138a and b. War and Revolution**

***SOCIOLOGY 141a. Marx and Freud**

***SOCIOLOGY 141b. Advanced Seminar on Marx and Freud**

SOCIOLOGY 143aR. Studies in Social Interaction, The Self and Society

Consideration of the underlying forces connecting (a) the individual and his personality, (b) interaction and interpersonal life, and (c) social structure and culture. Authors include Wilhelm Reich, Erich Fromm, Herbert Marcuse, Phil Rieff and Philip Slater.

Mr. Derber

SOCIOLOGY 145a. Sociology of Life Styles

Exploring the meaning of social class membership as it is communicated through the process of socialization. Discussion of the effects of education, use of language, political status and differential aspects of family life. Selected readings in social psychology and child development.

Ms. Rosenthal

SOCIOLOGY 147 a. Social Psychology of Organizations and Groups

The impact of social structure and social arrangements on individuals and groups.

Issues such as power and powerlessness, communication and trust, authority and influence, self-identity formation and personal change, and "success" in organizations will be examined in a large number of organizations and groups, including corporations, unions, mental hospitals, communities, peer-self-help groups, "brain-washing" organizations, utopian communities, religious orders, and political movements. Field work and extensive participation in class discussions and group exercises may be required.

Ms. Kanter

***SOCIOLOGY 148a and b. Social Psychology of Consciousness**

***SOCIOLOGY 150a. Sociology of Revolutionary Change**

SOCIOLOGY 151b. Environmental Research

This course will consist of a research project cooperatively conceived, designed, executed and analyzed by the students. Class meetings will scrutinize the process of each stage of research, from the initial conception of the problem to methods employed in research design and data interpretation.

Prerequisite: Permission of instructor.

Ms. Weissberg

SOCIOLOGY 152b. Sociology of Generations: The Adolescent in Society

An exploration of the dynamics of adolescent development in relationship to the experience of the preceding generation and the contemporary social environment. The readings will focus on current theories of adolescent behavior and its sociological correlates.

Ms. Rosenthal

***SOCIOLOGY 154b. Sociology of Science**

***SOCIOLOGY 155b. Social Movements**

SOCIOLOGY 163b. Therapy and Punishment (Criminology II)

Study of the implications of the "therapeutic state." Critical analysis of contemporary thought and practice in the field of social control, and the legal and social-psychiatric dilemmas with respect to therapeutic interventions.

Ms. Hayim

SOCIOLOGY 164aR. Existential Sociology

Introduction to existential thought and its integration with selected sociological theories on human interaction and anxiety, individual freedom, options for social reorganization and the socio-historical implications of growth, crisis and death. Readings include works by Sartre, Kierkegaard, Nietzsche, Mead, Laing, Merleau-Ponty and others.

Ms. Hayim and Mr. Stein

***SOCIOLOGY 169a. Religion and Ethnicity in American History**

***SOCIOLOGY 172b. The Family in the United States**

SOCIOLOGY 180a. Marxism and Sociology

An examination of the contributions of the Marxian intellectual tradition to sociology with particular reference to concepts of social class, change (revolutionary and otherwise), capitalism as a developing mode of production, the transition to socialism and socialist alternatives. The course will be run as a seminar. Every student will be expected to participate fully. There will be frequent written work and reports.

Mr. Ross

SOCIOLOGY 185a and b. Research Methods and Statistics

See Social Welfare 4.01, 4.02.

*Mr. Kurtz***SOCIOLOGY 188b. Sociology of Law**

The legal order considered in a framework of cross-cultural and historical comparison. The role of the instruments of the law and of the administration of justice in contemporary society.

*Mr. Bittner***SOCIOLOGY 190b. Social Organization of Medical Settings**

An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professions and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed.

*Mr. Zola***SOCIOLOGY 191a. Health, Community, and Society**

An exploration into interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, and the place of social science in medicine. *Mr. Zola*

SOCIOLOGY 192b. Healing and Healers

Healing and healers are not confined to any single licensed group in our society, no matter how much some would wish it to be so. In addition to describing the characteristics of recruitment, socialization, training, and careers of the established "helping" occupations, we will explore the already existing, sometimes competitive resources, both in our own country and cross-culturally.

Enrollment limited to twenty-five students.

*Mr. Zola***SOCIOLOGY 200a. Classical Sociological Theory**

Critical readings of the sociologies of Marx, Weber and Durkheim. *Ms. Weissberg*

SOCIOLOGY 200b. Theory in Modern American Sociology

Chicago sociology, role theory, symbolic interactions, structural functionalism and its critics.

*Ms. Weissberg****SOCIOLOGY 203a. Field Methods in Sociological Research****SOCIOLOGY 203b. Field Methods in Sociological Research**

Intensive practice in sociological observation and concentrated field work along with readings and discussion of the theoretical issues involved. *Mr. Fellman*

SOCIOLOGY 204a. Sociology and History**SOCIOLOGY 207a. Issues in Higher Education Seminar****SOCIOLOGY 208a. Seminar in the Sociology of Organizations**

History of organization theory since Weber, including Weber, Marx, "scientific management," the human relations approach, critics of the dysfunctions of bureaucracy, and contemporary conflict-oriented, open systems, and structuralist approaches. Organization and management theory as ideology. The macro-

sociology of organizations: the contribution of the legal system to the development of corporate capitalism. The nature of power, authority, dominance, and compliance in complex organizations. Conditions for non-hierarchical and democratic organizations. Structural position and work psychology especially as position shapes the prospects, behavior, and outlooks of workers and managers, women and men.

Ms. Kanter

***SOCIOLOGY 209b. The American Working Class**

***SOCIOLOGY 211a. Research on Women and Society**

***SOCIOLOGY 214a. Topics in Social Psychology: Freud and the Freudian Tradition**

***SOCIOLOGY 216b. Topics in Sociological Theory**

SOCIOLOGY 217a and b. Problems and Concepts in Medical Sociology and Deviance

A general seminar on current research and theoretical issues. Individual projects will be encouraged.

Mr. Zola

***SOCIOLOGY 218b. Advanced Topics in Sociology**

***SOCIOLOGY 220b. Seminar on the Sociology of Politics**

***SOCIOLOGY 222a. Utopia and Utopian Communities**

***SOCIOLOGY 225a and b. Community Sociology**

SOCIOLOGY 226aR. Theories in Social Psychology

Intensive examination of major theories of group process, interpersonal relationships, the self and society, and social interaction. Theorists considered will include Cooley, Mead, Dewey, Goffman, Bateson, Laing and Buber.

Mr. Schwartz

***SOCIOLOGY 227b. Group Process Seminar**

SOCIOLOGY 228a. Themes in Sociological Theory: Phenomenological Sociology (Alfred Schutz)

An introduction to phenomenology in its bearing on social science and especially sociology through an intensive study of Alfred Schutz.

Mr. Wolff

SOCIOLOGY 228b. Themes in Sociological Theory: Phenomenological Sociology (Georg Simmel or Karl Mannheim)

Intensive study of the works of either Georg Simmel or Karl Mannheim (final choice to be made by instructor and class).

Mr. Wolff

SOCIOLOGY 229b. Seminar on the Family

Advanced reading, research, and discussion on family process and organization. Focus on internal dynamics of the family and on the family as a social institution in many societies and historical times. Class will undertake individual or collective research projects.

Ms. Kanter

SOCIOLOGY 230-249a and b. Readings in Sociological Literature

230a and b.	<i>Mr. Bittner</i>	242a and b.	<i>Mr. Wolff</i>
232a and b.	<i>Mr. Derber</i>	243a and b.	<i>Mr. Zola</i>
233a and b.	<i>Mr. Fellman</i>	244a and b.	<i>Mr. Kecskemeti</i>
*234a and b.	<i>Mr. Fisher</i>	246a and b.	<i>Ms. Hayim</i>
236a and b.	<i>Ms. Kanter</i>	247a and b.	<i>Ms. Rosenthal</i>
238a.	<i>Mr. Ross</i>	248a and b.	<i>Mr. Hughes</i>
239a and b.	<i>Mr. Schwartz</i>	249a and b.	<i>Ms. Weissberg</i>
240a and b.	<i>Mr. Stein</i>		

***SOCIOLOGY 254a and b. Casting and Forecasting of Medical Roles**

SOCIOLOGY 290c. Pro-Seminar

A seminar meeting once a week in which the faculty introduces their interests and research.

Required of all first year graduate students.

Mr. Stein

***SOCIOLOGY 301. Advanced Field Research**

***SOCIOLOGY 400. Dissertation Research Seminar**

SOCIOLOGY 401-420. Dissertation Research

Independent research for the Ph.D. degree.

401.	<i>Mr. Bittner</i>	412.	<i>Mr. Stein</i>
403.	<i>Mr. Derber</i>	414.	<i>Mr. Wolff</i>
404.	<i>Mr. Fellman</i>	415.	<i>Mr. Zola</i>
405.	<i>Mr. Fisher</i>	416.	<i>Mr. Kecskemeti</i>
407.	<i>Mr. Hughes</i>	418.	<i>Ms. Hayim</i>
408.	<i>Ms. Kanter</i>	419.	<i>Ms. Rosenthal</i>
410.	<i>Mr. Ross</i>	420.	<i>Ms. Weissberg</i>
411.	<i>Mr. Schwartz</i>		



SPANISH

See Joint Program of Literary Studies (page 89).

THEATER ARTS

Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate—to develop skilled craftsmen of knowledge and judgment about the art.

The curriculum combines professionally oriented training in four theatrical disciplines—*Acting*, *Directing*, *Design/Technical* and *Dramatic Writing*. The production program provides extensive practical experience for all students on and behind the stages of the three Spingold theaters, where the actors act, the directors direct, the designers design and construct, and the playwrights have the opportunity to see their accepted plays performed by casts which may include professional actors-in-residence.

Brandeis University Theater Arts Department is a member of the League of Professional Theater Training Programs.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. When applying, students must define their area of concentration: namely, acting, directing, design/technical, or dramatic writing. Besides the standard application materials, the department requires an audition for applicants in acting and directing, submission of a portfolio for design/technical applicants and submission of an original script (or other example of creative writing) for dramatic writing applicants.

Auditions for actors and directors are held at Brandeis and at other locations in conjunction with the League of Professional Theater Training Programs. Information about times and places for auditions, and the type of audition material to be prepared, will be furnished by the department *after* applications have been received. Interviews for playwriting and design/technical applicants will be arranged *after* submission of application. Actors and directors are also encouraged to submit resumes and photographs.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by March 1 of their first year in residence.

Faculty

Professor Charles W. Moore, Chairman

Professor Howard Bay

Professor James H. Clay

Professor Theodore Kazanoff

Professor Martin Halpern

Associate Professor Maureen Heneghan

Assistant Professor Muriel Dolan

Assistant Professor Robert O. Moody

Assistant Professor Cheryl McFadden

Lecturer Daniel Gidron

Part-time Teaching Staff: Walter Dolan

Part-time Teaching Staff: Barbara Harris

Part-time Teaching Staff: Hilary Sherred

Degree Requirements

Master of Fine Arts

Residence Requirements. Acting: two or three years. Acting with performance certification: three years. Directing: two years. Directing with production certification: three years. Design/Technical: normally, three years. Playwriting: two years.

Programs of Study

ACTING

Required Courses First Year:

THEATER ARTS 203. Acting Studies: I *Messrs. Moore and Kazanoff*

THEATER ARTS 207. Movement for the Actor: I *Ms. McFadden*

THEATER ARTS 209. Voice/Speech Studies for the Actor: I *Ms. Dolan*

THEATER ARTS 225. Production Laboratory: I *Mr. Dolan*

Theater Arts 201 or one elective course each semester in dramatic theory or literature.

Required Courses Second Year:

THEATER ARTS 204. Acting Studies: II *Messrs. Moore and Kazanoff*

THEATER ARTS 208. Movement for the Actor: II *Ms. McFadden*

THEATER ARTS 210. Voice/Speech Studies for the Actor: II *Ms. Dolan*

Theater Arts 202 or one elective course each semester in dramatic theory or literature.

Required Courses Third Year:

THEATER ARTS 205. Acting Studies: III *Acting Faculty*

THEATER ARTS 229. Production Laboratory: III *Mr. Dolan*

Assignment to Movement and/or Voice/Speech classes, Theater Arts 207, 208, 209, 210 for additional study in these areas as necessary, plus selection of additional courses to accommodate the needs of the students. Courses are determined in consultation with the Acting Faculty.

Performance Requirements

First Year:

First semester: Emphasis on classroom work. Faculty will supplement classroom instruction with private sessions on a one-to-one basis. Students are barred from performance in any production, except with special permission of the Acting Faculty.

Second Semester: Emphasis on classroom work, but student may try out for Theater III and other productions with special permission of the Acting Faculty. First year actors must expect faculty supervision of work outside of class.

Second Year:

All second year actors are required to audition for and play as cast in all major productions in Theater I and II, unless excused by the chairman after consultation with the director.

Third Year:

Core of acting students for Theater I and II productions. Required to audition and play as cast in all major productions, unless excused by the chairman after consultation with the director.

Production Requirement

All acting students are required to serve on a crew for one major department production each year.

DIRECTING

Required Courses First Year:

THEATER ARTS 203. Acting Studies: I	<i>Messrs. Moore and Kazanoff</i>
THEATER ARTS 207. Movement for the Actor: I	<i>Ms. McFadden</i>
THEATER ARTS 209. Voice/Speech Studies for the Actor: I	<i>Ms. Dolan</i>
THEATER ARTS 213. Advanced Directing	<i>Mr. Moore</i>
THEATER ARTS 225. Production Laboratory: I	

Theater Arts 201 or one elective course each semester in dramatic theory or literature.

Required Courses Second Year:

THEATER ARTS 202. Tutorial in Dramatic Theory and Literature: I	<i>Mr. Clay</i>
THEATER ARTS 204. Acting Studies: II	<i>Messrs. Moore and Kazanoff</i>
THEATER ARTS 310. Thesis Projects: I	<i>Messrs. Kazanoff, Bay or Halpern</i>

One or two elective courses to be determined in consultation with the Acting/Directing Faculty.

Required Courses Third Year:

THEATER ARTS 205. Acting Studies: III	<i>Messrs. Moore and Kazanoff</i>
THEATER ARTS 229. Production Laboratory: III	<i>Mr. Dolan</i>
THEATER ARTS 311. Thesis Projects: II	<i>Mr. Kazanoff</i>

Production Requirements

First year students are required to stage manage on Theater I productions, and direct two workshop productions in Theater III. Acting privileges and restrictions are the same as for first year acting students.

Second year students are normally required to direct one major production in

Theater II. They must audition for acting roles in all major productions when there are no conflicts with directorial assignments.

Third year students will direct one major production in Theater I and II and/or a production cast entirely from undergraduates.

DESIGN-TECHNICAL

First Year:

THEATER ARTS 211. Scenic Design: I	<i>Mr. Bay</i>
THEATER ARTS 214. Costume Construction Laboratory fee: \$10.00	<i>Ms. Sherred</i>
THEATER ARTS 217. Costume Design	<i>Ms. Heneghan</i>
THEATER ARTS 219. Lighting Design: I	<i>Ms. Harris</i>
THEATER ARTS 221. Sketching and Rendering: I	<i>Mr. Moody</i>
THEATER ARTS 223. Scenic Painting: I Laboratory fee: \$10.00 per semester.	<i>Mr. Moody</i>
THEATER ARTS 225. Production Laboratory: I	<i>Mr. Dolan</i>

Second Year:

THEATER ARTS 212. Scenic Design: II	<i>Mr. Bay</i>
THEATER ARTS 218. Advanced Costume Design	<i>Ms. Heneghan</i>
THEATER ARTS 220. Lighting Design: II	<i>Mr. Bay and Ms. Harris</i>
THEATER ARTS 224. Stage Mechanics Laboratory fee: \$5.00	<i>Mr. Dolan</i>
THEATER ARTS 226. Production Laboratory: II	<i>Mr. Dolan</i>
THEATER ARTS 227. Sketching and Rendering: II	<i>Mr. Moody</i>
THEATER ARTS 228. Scenic Painting: II Laboratory fee: \$10.00 per semester. One elective course each semester in dramatic theory or literature.	<i>Mr. Moody</i>

Third Year:

THEATER ARTS 300. Independent Study	<i>Staff</i>
THEATER ARTS 310. Thesis Projects	<i>Messrs. Kazanoff, Bay or Halpern</i>
One elective course each semester in dramatic theory or literature, or Theater Arts 202.	

Thesis Project and Participation in Productions: The graduate design thesis is the final problem in the design/technical program. It is the full presentation of projected designs for the scenery, costumes and lighting for a specific play or opera presented in portfolio form, with the emphasis depending upon the student's major field of interest—sets, lighting, or costumes. In some cases, a student's main-stage design assignments in the second or third year may constitute part of the thesis project.

All major productions are designed by graduate students. Therefore, a student may be expected to be involved in a design capacity on at least three productions during each year. In addition, students will participate on various production crews as arranged in conference with the design faculty.

DRAMATIC WRITING

First Year:

THEATER ARTS 215. Seminar in Dramatic Writing: I

Mr. Halpern

THEATER ARTS 225. Production Laboratory: I

Mr. Dolan

Two elective courses each semester.

Second Year:

THEATER ARTS 202. Tutorial in Dramatic Theory and Literature

Mr. Clay

THEATER ARTS 216. Seminar in Dramatic Writing: II

Mr. Halpern

THEATER ARTS 226. Production Laboratory: II

Mr. Dolan

THEATER ARTS 310b. Thesis Play

Mr. Halpern

One elective course in the first semester.

Performance and Production Requirements. Playwriting students are required to participate in the preparation of any studio, workshop, or major production of their plays mounted during the time they are in residence. They are also required to participate in two other departmental productions each year—either as performers or on production crews (approximately sixty hours of crew assignment). Fulfillment of this requirement will be certified by a "Credit" grade in the production laboratory courses, Theater Arts 225 and 226.

Elective Courses Available to Graduate Students:

THEATER ARTS 201. Tutorial in Dramatic Theory and Literature

Mr. Gidron

THEATER ARTS 222. Drafting

Laboratory fee: \$5.00.

Mr. Dolan

Choices of elective courses require the approval of the graduate adviser. They may be selected from among the graduate or advanced undergraduate offerings in Theater Arts or, where appropriate, from offerings of other university departments. Students may take more elective courses than are required in their programs of study if the adviser approves.



University Organization

Board of Trustees

Under Massachusetts law, the 50-member Board of Trustees is the governing body of the University, and includes representatives from the faculty and the student body. Trustees serve five-year terms.

The President and the Chancellor

The President is the chief executive officer of the University. He is appointed by the Board of Trustees and is responsible for all University activities. Chancellor of the University is an honorary title held by Abram L. Sachar, whose 20 years of experience as first president of Brandeis is now utilized for the welfare of the University. The Chancellorship carries no administrative responsibilities.

Academic Deans

The Dean of Faculty supervises academic policy, undergraduate and graduate curriculum, the faculty and its departments of instruction.

The Dean of the College of Arts and Sciences assumes responsibility for many areas affecting the academic lives of undergraduates, including curriculum development, advisory services and the academic progress of students.

The Dean of the Graduate School of Arts and Sciences oversees the individualized programs of study for scholars, scientists and artists in 20 disciplines.

The Dean of the Florence Heller Graduate School for Advanced Studies in Social Welfare oversees the academic activities of the University's first and only professional school, and its work in such areas as health, aging, income and employment, and minorities.

The Faculty Senate

The Faculty Senate is the representative body of the faculty, and may initiate discussion of such issues as academic freedom and responsibility, University policy, appointments, tenure, dismissal and salaries.

The Board of Fellows

Created in 1951, the Board of Fellows consists of more than 300 national leaders from a broad base of business, educational and public life. Its members lend counsel, expertise and support to University development and planning programs.

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President's Councilors are leading men and women throughout the country whose skills and experience are placed at the disposal of the Brandeis President in areas of their special competence.

National Women's Committee

The National Women's Committee, now an organization of approximately 60,000 members, has been a partner with the University since 1948. This volunteer organization gives its membership a wide range of educational offerings. These include unique study group programs with syllabi provided by Brandeis faculty; adult education seminars in local communities called "University on Wheels"; and special lectures by University speakers. The 115 chapters across the country are embassies of good will for the University. The central commitment of the Women's Committee, however, is to the Brandeis University libraries. Since it was founded by seven members in Boston, it has raised over 13 million dollars in support of the libraries.

University Libraries

From an initial 2,000 volumes housed in a remodeled stone stable in 1948, the holdings of the Goldfarb Library and the Gerstenzang Library of Science today number 658,000 volumes. The libraries boast an impressive collection of microform holdings, as well as periodical titles and newspapers.

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The Office of Alumni Relations, located in the Bernstein-Marcus Administration Center, directs and coordinates programs and publications for more than 11,000 Brandeis alumni, the National Alumni Association, regional Alumni Chapters and the Alumni Fund.



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The members of the Graduate Council of the Graduate School of Arts and Sciences are appointed annually by the President of the University. Members of the Graduate Council for 1976-77 are:

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*** On leave, Spring Term, 1976-77.

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*** On leave, Spring Term, 1976-77.

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** On leave, Fall Term, 1976-77.

*** On leave, Spring Term, 1976-77.

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* On leave, 1976-77.

** On leave, Fall Term, 1976-77.

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Alan Lelchuk, Assistant Professor of English
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Martin A. Levin, Associate Professor of Politics
Ford Foundation Grant

**Marvin Meyers, Harry S. Truman Professor of
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**Leonard C. Muellner, Assistant Professor of
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American Council of Learned Societies Grant

Peter B. Natchez, Assistant Professor of Politics
Hoover Institute Grant

Richard S. Palais, Professor of Mathematics
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**Marguerite S. Robinson, Associate Professor of
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Grants from American Institute of Indian Studies and
Indo-U.S. Subcommission on Education and Culture

Steven J. Rosen, Assistant Professor of Politics
Australian University

James H. Schulz, Professor of Welfare Economics
Fulbright Grant to India

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